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Appendices:

Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes

Executive Summary: Phase II Report

This report is the latest in a series of important actions toward fulfilling this Administration's commitment to achieving high-quality nursing home care and providing reliable, understandable information to the public. This report has been conducted in response to public concern about inadequate nursing home staffing and a long-standing requirement for a study and report to Congress on the "appropriateness" of establishing minimum nurse staffing ratios in nursing homes. A Phase I report was delivered to Congress in July 2000.

Currently CMS has requirements of 8 hours of registered nurse and 24 hours of licensed nurse coverage per day that applies to all facilities, irrespective of the number of residents. The Congressional requirement for this study essentially asks the Secretary to determine if there is some appropriate ratio of nursing staff to residents. However, without substantial evidence that there exists a relationship between levels of staff and resident outcomes, the "appropriateness" of establishing minimum nurse staffing ratios would be a moot point. This report demonstrates that there are critical staffing thresholds, below which the quality of care delivered to nursing home residents could be compromised.

In this concluding Phase II report, an analysis of data from 10 states with over 5,000 facilities found evidence of a relationship between staffing ratios and the quality of nursing home care. The analysis identified staffing thresholds that maximize quality outcomes. These thresholds vary by nursing category and whether the quality outcomes are related to the short stay or long stay nursing home population. Although no quality improvements are observed for staffing levels above these thresholds, quality is improved with incremental increases in staffing up to the identified thresholds.

"Appropriateness" of Minimum Nurse Staffing Ratios: Other Considerations

The report also found other issues relevant to a consideration of "appropriateness" that are outlined below.

- The study indicates that current nursing workforce shortages do not preclude higher minimum staffing requirements, but that implementation of staffing thresholds would require substantial increases in wage rates.

- There are policy alternatives to minimum nurse staffing requirements that could result in enhanced nurse staffing resources. For example, a requirement for minimum expenditures for nursing staffing could result in similar quality improvements.

- High turnover of nursing personnel can be reduced within the current environment. For example, the study indicates that there are a number of management practices that resulted in lower turnover within tight labor markets.

- Nurse staffing data currently does not exist that is sufficiently accurate for consumer information and for determining compliance with any staffing requirement that might be implemented. However, it appears that this could be remedied with little additional burden to providers.

- There is no definitive answer on whether the cost of implementing nurse staffing ratio requirements is so high as to preclude its feasibility. Medicare expenditures are sufficient to staff at minimum levels and total national nursing home expenditures would need to increase by an estimated 8 percent. Ongoing work continues on this question.

Importance Of Factors Other Than Staffing Numbers/Ratios

The relationship between quality and critical minimum staffing levels was supported by case studies of individual facilities, units, and residents. Below minimum staffing levels on particular units and shifts, there appears to be little facilities can do to mitigate quality problems. But these staffing minimums, to the degree that they can be translated into facility-wide averages, are well below the thresholds discussed above which result in the maximum quality observed. Above these minimum levels identified in the case studies, addressing a number of nursing and management practices can optimize care. These include the involvement of non-nursing staff (e.g., single task workers, management) during peak hours (e.g., mealtimes); facility practices with respect to absenteeism; and good management and supervision including clear guidelines and procedures, clear expectations

regarding standards of care, use of tools and materials to guide practice, and consistent enforcement of standards.

Additional qualitative analyses in the report emphasized the importance of improved nurse aide training. Clinical training during a nursing assistant's first few months on the job, and formal supervision and continuing education throughout a nursing assistant's career are particularly important.

A strong relationship was also found between nursing assistant retention and several quality measures. Although high turnover and retention could not realistically be subject to regulation, two sets of case studies on management practices, the qualitative study on nurse aide training, and the retention analysis, all demonstrate the importance of other staffing factors besides staffing levels in quality of nursing home care.

Next Steps

Notwithstanding all the unresolved issues related to the appropriateness of minimum nurse staffing ratios, the Phase II report has identified two areas that will lead to improvement in nurse staffing: the development of a reliable public reporting system of nurse staffing information and the need for completing the analysis of costs associated with higher staffing levels.

Reliable Public Reporting of Nurse Staffing Information

The Phase I report established that currently available staffing information on individual nursing homes is highly inaccurate. Yet accurate staffing information is important for consumers and would be critical to any effort to enforce a minimum staffing requirement. With reliable information, nurse staffing levels may simply increase due to the market demand created by an informed public. Although the staffing thresholds identified in the report as maximizing quality may not ultimately become the basis for Federal or State minimum requirements, consumers arguably have the right to select homes with these standards in mind.

In order to make reliable staffing information available to the public, the Department is initiating a project to develop and test a more accurate reporting form for providers, an audit mechanism for what is reported, and the most efficient method of transmitting these data for public reporting. The Phase II study conducted some preliminary field work which can be the starting point for developing a reliable public reporting system for nurse staffing.

Cost Analysis

The report does not make specific policy recommendations. It does, however, provide an empirical basis for any examination of issues and costs related to nursing home staffing proposals. Although many states may look to the report for standards upon which to base minimum staffing requirements under their state licensure authority, we do not think there is currently sufficient information upon which to base and enforce a Federal requirement. An analysis is needed of the quality improvement/cost tradeoff as staffing increases up to the thresholds. In considering any staffing requirement, it is fundamentally important to know how much quality we are purchasing with cost increases. Ultimately, any cost analysis has to be based on specific legislative proposals, the implementation phase-in schedules, and the programmatic impacts.

Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes

Overview of the Phase II Report: Background, Study Approach, Findings, and Conclusions[1]

Background

Purpose

The primary purpose of this study is to meet the requirements of Section 4801(b)(7)(e)(17)(B) of Public Law 101-508:

> Study on Staffing Requirements in Nursing Facilities.--The Secretary shall conduct a study and report to Congress no later than January 1, 1992, on the appropriateness of establishing minimum caregiver to resident ratios and minimum supervisor to caregiver ratios for skilled nursing facilities serving as providers of services under title XVIII [Medicare] of the Social Security Act and nursing facilities receiving payments under a State plan under title XIX [Medicaid] of the Social Security Act, and shall include in such study recommendations regarding appropriate minimum ratios.

The Federal Reports Elimination Act of 1998 extended the due date of this report to January 1, 1999. A Phase I report of preliminary findings was delivered to Congress in July, 2000. Although the Phase II report makes no recommendations, it should provide important information for any policy initiatives with respect to nursing home staffing. The following is a summary of Phase II.

Public Concern With Nursing Home Staffing

Reports by the U.S. General Accounting Office, the U.S. Office of the Inspector General and the Centers for Medicare and Medicaid Services' (CMS), formerly the Health Care Financing Administration, comprehensive July 1998 nursing home Report to Congress have identified a range of serious problems including malnutrition, dehydration, pressure sores, abuse and neglect. Hearings before the U.S. Senate Special Committee on Aging and CMS' Phase I report have pointed to nurse staffing as a potential root cause of many of the problems observed. In addition, a continuous flow of newspaper articles and television news reports highlighting inadequate care and abuse in nursing homes has heightened public concern with this issue.

1 Author: Marvin Feuerberg, Centers for Medicare and Medicaid Services (CMS).

This concern across the country regarding adequate staffing in nursing homes has been reflected in several States among both those responsible for licensure standards and rate-setters. At least 29 States have imposed new, more stringent staffing requirements under their State licensure authority and several others have introduced State legislation in this area.

Reports by the Institute of Medicine (IOM) in 1996 and 2001 recommended a higher nursing home minimum (not a minimum ratio) of 24-hour registered nursing care. The IOM was not prepared to recommend a minimum ratio, in part because there was not sufficient knowledge to appropriately adjust any recommended ratio by the casemix of the patient population. Although the need for increased staff may seem intuitively obvious, the empirical evidence in support of this general position and *supportive of specific ratios* is fragmentary. Although the IOM reports along with CMS' Phase I report have provided some additional information, the essential question raised by the Omnibus Budget Reconciliation Act of 1990 (OBRA '90) -- whether an appropriate minimum ratio exists – has not received a definitive answer.

CMS' Current Authority/Role in Nurse Staffing Requirements

Over 95 percent of U.S. nursing homes participate in the Medicare and/or Medicaid program(s). CMS is responsible for ensuring the health and safety of the residents of these nursing homes, who represent one of the nation's most vulnerable populations. Under the statutory authority of OBRA '87, CMS issued regulations and program guidance -- including a *general* requirement that nursing homes must provide ". . . sufficient nursing staff to attain or maintain the highest practicable . . . well-being of each resident . . ." Many professionals view this general requirement as too vague to serve as an adequate Federal standard. Federal regulations also specify *minimum* requirements of 8-hours of registered nurse and 24-hours of licensed nurse coverage per day. However, since this minimum is the same for all facilities (e.g., the same for a 60 bed facility or a 600 bed facility), many professionals also view this requirement as inadequate; they argue for a required minimum nurse staff to resident *ratio*. These professionals recommend minimum nurse staffing ratios that would be adjusted upward for nursing homes with residents who have greater care needs, such as those who suffer from Alzheimer's disease or other fragile medical conditions. The Congressional requirement for this study, described above, essentially asks the Secretary to determine if there is some appropriate ratio of nurses to residents.

Public Policy and Nursing Home Nurse Staffing

Public policy impacts nurse staffing indirectly through payment rates established by Medicare and by individual State Medicaid nursing home payment systems (usually administered by a rate-setting component of the State Medicaid bureau). In addition, public policy decision-making impacts nurse staffing directly through quality regulations, including explicit nurse staffing standards administered by the State Health Departments and State survey agencies.

Despite considerable variation among States' Medicaid payment systems and between Medicare and Medicaid, all of the nation's public payments for nursing home services are fundamentally driven by historical spending patterns. Thus, if nursing homes have been historically understaffed, then public payment rates could require adjustment if policy makers require substantially different staffing patterns. If such adjustments were considered, both the level of payments and the advantages and disadvantages of a system that ties payment more closely to actual spending on staffing would merit examination. These structural features of payment were found to be important to both a system's incentives and its overall cost.

Evaluation Contractors, Study Investigators, And Technical Expert Panel

Abt Associates is the prime evaluation contractor for this study. Abt's Alan White, Ph.D., and Donna Hurd, RN, MSN served as Principal Investigator and Project Manager, respectively. Important subcontractors and/or consultants to Abt or CMS on this project include: University of Colorado Health Sciences Center, Andrew Kramer, MD, Principal Investigator; University of California, Los Angeles and Los Angeles Jewish Home, Anna & Harry Borun Center for Gerontological Research, John F. Schnelle, Ph.D., Principal Investigator; Survey Solutions, Inc., Beth A. Klitch, President; Barbara B. Manard, Ph.D., Principal, the Manard Company, Chevy Chase, Maryland; Susan C. Eaton, Ph.D., John F. Kennedy School of Government at Harvard University; and Mary Ann Wilner, Ph.D., Director of Health Policy, Paraprofessional Healthcare Institute. In addition, CMS' co-project officers for the study, Susan Joslin, Ph.D. and Marvin Feuerberg, Ph.D., have been responsible for much of the study design, implementation, and analyses employed throughout the project.

Technical Expert Panel (TEP)

Abt Associates convened a TEP to review and comment on key project deliverables, such as design plans for and results of technical analyses. The TEP was comprised of nationally recognized experts in long-term care, nursing, economics, and research and analysis.

Stakeholders Input

In addition to the formal TEP, Abt Associates and CMS sought and obtained input on the planned study design from different stakeholders in the long-term care staffing debate through other mechanisms, such as official meetings with representatives from consumer advocate groups, unions, and the nursing home industry. In addition, informal conversations were held with policy experts not included on the Abt TEP.

Attribution

A footnote on the first page of each of the 11 chapters details the appropriate attribution and acknowledgments for all of the analyses contained in the chapter. Although this is a CMS report for which it alone is responsible, *each of the reports received from contractors and subcontractors has not been changed or altered in any way*, other than minor editing.

Study Approach

Study Objectives

The primary objectives of the Phase I and Phase II studies are to determine: 1) if minimum nurse staffing ratios are appropriate and, if appropriate, 2) the potential cost and feasibility implications of minimum ratio requirements. Assessment of appropriateness was conceptualized to require, first, an analysis of the relationship between staffing ratios and quality. If no such relationship exists, then all other considerations related to appropriateness become moot. Conversely, if the staffing-quality relationship is real and substantial, then appropriateness of establishing minimum nurse staffing ratio requirements also entails the specification of the actual nurse staffing ratios, assessment of the costs, feasibility of implementation, and other considerations which are the subject of this Phase II report.

To address the first aspect of appropriateness – the link between staffing and quality - two core analyses were conducted. One analysis focused on nurse staffing levels necessary to avoid bad outcomes. The key study questions for this analysis were: *Is there some ratio of nurses to residents below which nursing home residents are at substantially increased risk of quality problems? Conversely, is there some ratio of nurses to residents above which no additional improvements in quality are observed?*

The other core analysis focused on nurse aide staffing thresholds minimally necessary to provide *care processes* consistent with the OBRA '87 *optimal* standards and related regulations and guidelines.

In both Phase I and Phase II reports, the phrase "nurse staffing" refers to all three categories of nurses: Registered Nurses (RNs), Licensed Practical Nurses (LPNs), and Nurse Aides/Nursing Assistants (NAs).

Phase I Report Conclusions; Remaining Questions For Phase II

The analyses conducted in the Phase I Report firmly established that there are critical ratios of nurses to residents below which nursing home residents are at substantially increased risk of quality problems. These critical ratios (or thresholds) exist for certified nurse aides, total licensed staff, and registered nurses. This conclusion was based on new empirical analyses that were specifically designed to identify critical nurse staffing ratio thresholds, evidence that was not provided in other analyses, including both IOM reports. In addition, the Phase I analyses indicate that to meet the staffing thresholds, staffing levels would have to be increased in a substantial portion of facilities. However, due to a number of study limitations, the specific thresholds identified in Phase I were tentative. The Phase II study has replicated the prior analyses with more recent and better quality data, and a larger, more nationally representative sample of nursing homes.

The other core analysis of the Phase I study estimated the nurse aide time minimally necessary to implement five care processes which, in addition to routine care, have been linked to good resident outcomes. One limitation of this first study was that the minimum staffing levels required were projected only for an average nursing home. Many nursing homes are not average in the sense that facilities vary widely in terms of the residents they serve and the care requirements of these residents. The Phase II study has estimated the minimum necessary time for facilities that differ significantly with regard to the labor requirements necessary to implement the five care processes.

Findings

1. Relationship Between Staffing and Quality: Results of Two Basic Research Strategies

Although the link between low staffing levels and quality problems may seem intuitively obvious, there is no necessary connection. Of course, if all the nursing staff were removed, residents would be in severe jeopardy. Clearly, at *some* ratio of nurse staffing substantially increased levels of quality problems would occur. But there is no apriori reason, apart from empirical evidence, to assume that any or a substantial portion of nursing homes actually staff at these critically low levels.

In addition to the Phase I review of prior research, we identified and used two basic research strategies for addressing the key study question of whether there are appropriate minimum nurse staffing ratios:

- **Empirical Determination of the Relationship Between Staffing and Quality**

Using data from a representative sample of 10 states including over 5,000 facilities, the objective of the empirical analysis was to identify staffing thresholds below which quality of care was compromised and above which there was no further benefit of additional staffing with respect to quality. Staffing data were obtained from Medicaid cost reports and analyses were conducted separately for Nurse Aides/Nursing Assistants (NAs), licensed staff (RNs and LPNs combined), and RNs within the licensed staff total, excluding management staff. Quality measures related to hospital transfer for potentially avoidable causes (e.g. urinary tract infections, sepsis, electrolyte imbalance) for a short-stay sample of Medicare SNF admissions, and selected quality of care issues for the treatment of long-stay nursing home residents who were in the facility for at least 90 days (i.e. functional improvement, incidence of pressure sores, incidence of skin trauma, resisting care improvement, and weight loss). To identify staffing thresholds, logistic regression was used to examine associations between incremental increases in staffing and whether facilities were in the worst 10 percent of facilities with respect to each quality measure, controlling for the unique resident characteristics that were predictive of each quality measure. The analysis was conducted at the facility level, separately for each quality measure and then aggregated across measures

using a weighted average based on prevalence of the quality problems in the short-stay and long-stay populations.

For each measure, there was a pattern of incremental benefits of increased staffing until a threshold was reached at which point there were no further significant benefits with respect to quality when additional staff were utilized. These thresholds for NAs occurred at 2.4 hours per resident day for the short-stay quality measures and 2.8 hours per resident day for the long-stay quality measures, and for licensed staff at 1.15 hours per resident day for the hospital transfer short-stay measures and 1.3 hours per resident day for the long-stay quality measures. Within these totals, RN thresholds were at .55 for the short-stay quality measures and .75 hours per resident day for the long-stay quality measures. Thus, these thresholds provide staffing levels below which facilities were more likely to have quality problems in the quality areas studied (facilities in the worst decile had 2 to 10 times the average rate of quality problems), and above which these rates were not improved by increasing staffing ratios. Some variation in staffing variables for different quality measures is not surprising given the variation in mix and staff resources required to prevent or treat different problems.

Although no significant quality improvements are observed for staffing levels above these thresholds, quality is improved with incremental increases in staffing up to and including these thresholds. *Minimum staffing levels at any level up to these thresholds are associated with incremental quality improvements, with the greatest benefits as the thresholds are approached.*

Implementation of these thresholds as minimum requirements would find 52 percent of all nursing homes failing to meet all of these standards and 97 percent failing to meet one or more. The analysis also indicated that implementation of thresholds lower than those above which maximize quality, would still result in substantial improvements in a smaller, yet substantial portion of all nursing homes.

While staffing levels up to these thresholds represent possible minimum staffing ratios in order to reduce the likelihood of quality of care problems, casemix may influence levels for specific nursing homes. The case mix analyses suggested that these staffing thresholds to prevent inclusion in the worst 10 percent of facilities were relatively similar, regardless of facility casemix. Fewer facilities in the lowest risk category were in the worst 10 percent of facilities with respect to quality, but it appeared that quality improvements occurred until about the same thresholds in each casemix category. However, with more facilities in the worst 10 percent of facilities in the higher risk case mix categories, it makes sense for staffing requirements to be higher (i.e. closer to the threshold) in higher risk facilities. To date no feasible approach to casemix stratification has been developed. If no feasible way to adjust the thresholds by casemix is ultimately identified, this would in no way invalidate the thresholds that were identified. This is because the multivariate models used to identify the thresholds adjusted for facility casemix and other facility characteristics that were predictive of the quality measures.

- **A Time-Motion Approach To Setting Nurse Staffing Standards**

Variations between facilities in the needs of residents should logically influence how many direct care staff are needed to provide five key care processes: 1) dressing/grooming independence enhancement, 2) exercise, 3) feeding assistance, 4) changing wet clothes and repositioning residents, 5) providing toileting assistance and repositioning residents. The probable staff workload variations to provide these processes were estimated in facilities in New York and Ohio by analyzing MDS data, which described variations between facilities in the needs of residents for feeding and/or dressing assistance and incontinence care. This exercise was considered applicable to all residents. The analysis resulted in the identification of three types of facilities, which could be categorized as high, medium, or low workload facilities. The effects of ten different staffing levels on the ability of these homes to implement all five care processes were next simulated in a 40-bed unit. Staffing levels were varied from eight to sixteen FTEs over the 24-hour period. The major outcomes reported are the percentage of scheduled care processes in addition to routine care that could be delivered and waiting times for incontinence care and feeding assistance.

It was concluded that from 14 FTEs (low workload facilities) to 16 FTEs (high workload facilities) are minimally necessary to provide all care on a timely basis. These FTE staffing levels are equivalent to 2.8 and 3.2 nurse aide hours per resident day, respectively. Staffing levels that are similar to those reported in many of the nation's nursing facilities (ratio of 8:1 on day shift, 10:1 on evening shift, 20:1 on night shift; an equivalent of 2.2 hours per resident day) are predicted to result in long waits for service and the inconsistent implementation of care even under conditions when staff are working at unrealistically high productivity levels. It is estimated that in 2000 over 91 percent of nursing homes have nurse aide staffing levels that fall below the staffing thresholds identified as minimally necessary to provide the needed care processes for their specific resident population. In addition, over 40 percent of *all* nursing homes would need to increase nurse aide staffing by 50 percent or more to reach the minimum threshold associated with their resident population, and over 10 percent would need to increase their nurse aide hours in excess of 100 percent.

- **Relationship Between Staffing and Quality: Comparing the Empirical and Time-Motion Approach**

Although the time-motion approach might possibly be applied to care processes delivered by licensed nursing staff, the analysis presented in this report was confined to nurse aides (NAs); hence, the comparison of the two research strategies is confined to NAs. Apart from these differences in the scope of the two approaches, they essentially differ in their focus on potential minimal vs. optimal standards and on actual outcomes vs. potential outcomes.

The ten-state analysis of over 5,000 facilities identified staffing NA thresholds below which quality of care was compromised and above which there was no further benefit of additional staffing with respect to quality. These (or lower) thresholds could be the basis for minimum NA ratio requirements which would improve adverse rates of quality problems. However,

quality problems would be found even if all nursing facilities met the threshold requirement. In contrast, the time-motion thresholds identify the minimal nurse aide staff *necessary* to provide *all* services (i.e., the stated OBRA '87 standard as staff sufficient to provide ". . .the highest practical, physical, mental and psychosocial well-being of each resident. . . ") that could benefit residents. Hence, this is an estimate of the minimally necessary nurse aide staff to provide optimal care.

The time-motion simulation standard should be viewed as a necessary condition for optimal care by NAs, not a sufficient condition. The simulation estimate *assumes* a very highly motivated and productive nurse aide staff. Even under conditions of nurse aide staffing that meet or exceed these thresholds of potentially available time, what nurse aides actually do and accomplish with respect to patient care is dependent upon a sufficiently skilled licensed staff to supervise aides as well as other organizational factors. It is important to note that the nurse aide threshold identified in the empirical analysis of actual nursing homes for the long-stay population, 2.8 hrs. /per resident day, is only slightly less than the median threshold of about 3.0 hrs. estimated from the simulation analysis. This does not mean that the difference between a minimal and optimal standard is only 0.2 hrs. The evidence from the empirical analysis indicates that a minimum requirement of 2.8 hrs/per resident day would yield the maximum quality attainable with the knowledge, skill, and management practices currently found in nursing homes. The slightly higher threshold of 3.0 nurse aide hrs/ per resident day identified in the simulation analysis will not yield *under current conditions* an optimal or even more quality. But if one *assumes* very high motivation, knowledge, and productivity – conditions currently not typically found in nursing homes – then an optimal standard will be achieved.

2. Appropriateness of Minimum Staff Ratios: Other Considerations

The "appropriateness" of establishing minimum nurse staffing ratios, the central policy issue of this Congressionally-mandated report, cannot be inferred solely from empirical studies demonstrating a strong relationship between critical staffing ratio thresholds and resident outcomes. Of course, if no such relationship is found or if the evidence is ambiguous, then the policy issue becomes moot. As noted above, the evidence supporting the existence of these critical thresholds is strong and compelling. But, as we have also noted, there are other issues relevant to a consideration of "appropriateness." Among these issues there is, first, the question of whether these staffing thresholds can or should be adjusted for casemix. Second, it can be argued that there is currently a sufficiently severe shortage of all nursing personnel that a mandated requirement could never be implemented, whatever the merits of higher staffing levels. Further, the workforce shortage may contribute to high turnover and lower retention of nursing staff which further compromises quality. Third, there is the question of whether the existing nurse staffing data are sufficiently accurate for determining compliance with any nurse staffing requirement that might be implemented. Fourth, there is the issue of the costs of increased staffing levels. Fifth, there are contentious and complex policies issues that are related to how the current public payment system, Medicare and Medicaid, need to be modified to support improved staffing.

Apart from the impact of staffing on quality problems, these other issues are inherent in any consideration of establishing minimum ratio requirements. They are briefly discussed below.

Appropriateness Issue: Does The Current Nursing Workforce Shortage Preclude Higher Minimum Staffing Requirements?

An important consideration in evaluating the feasibility of a minimum nurse staffing requirement is whether the size of the nursing workforce is adequate to allow facilities to staff at the higher required levels. While available data limit the extent to which we can measure the size of the nursing shortage, there are good reasons for believing that a shortage currently exists, at least in certain parts of the country. Studies have found large increases in reported vacancy rates in recent years, and many nursing facilities report staff shortages. There are also good reasons for believing that the size of this shortage will increase over time.

Because of population changes, the demand for nursing care is expected to steadily increase. There is expected to be rapid growth of the elderly population—the number of individuals aged 85 and over, those most in need of nursing care, is expected to more than double over the next 30 years. Population trends suggest that the number of individuals entering the nursing profession will increase only slightly.

- Enrollment in schools of nursing has declined in recent years, and, as a result, the average age of the RN workforce has increased.

- The projected size of the female population between the ages of 25 and 54, the group which has traditionally filled most nurse aide positions, is expected to remain relatively unchanged between 2000 and 2030, limiting likely entry into nursing.

The staffing thresholds identified in chapter 2 would require large staffing increases at some nursing homes. Nationwide, the potential staffing thresholds identified in this report would require facilities to hire an additional 77,000 – 137,000 RNs, 22,000 – 27,000 LPNs, and 181,000 – 310,000 nurse aides. The requirement would increase overall demand (across all employment settings) for nurse aides by 13 – 21 percent and increase overall demand for RNs by between 5 and 9 percent.

The increased demand for nurses that would result from implementation of the staffing thresholds would likely require increases in the wage rates paid to nurses. These increases would affect not only nursing homes, but also other sectors (hospitals, home health) that compete with nursing homes for nursing staff. Our best estimate is that the thresholds identified in chapter 2 would increase RN wage rates by between 2.5 and 7 percent, an increase of between $0.50 and $1.40 per hour, given an average RN wage rate of $20.00 per hour. For facilities to staff at the higher nurse aide levels that would be required, nurse aide compensation would need to increase by between 10 and 22 percent, an increase of between $0.86 and $1.89 per hour. The exact amount of the increase depends on the threshold

adopted and the sensitivity of the nursing workforce to wage rate changes, but implementation of the minimum nurse staffing ratios identified in this report would have a considerable impact on nursing workforce requirements.

Minimum Nursing Expenditures: A Policy Alternative to Minimum Nurse Staffing Requirements

Although the above estimates of wage increases necessary to meet the demand of higher staffing thresholds are substantial, they are not so high as to preclude the possibility of implementing the thresholds. Further, implementation of lower thresholds than optimal would still result in substantial improvements in a smaller, yet large percentage – even the majority - of all nursing homes. The wage increases necessary to meet the demand of these lower thresholds would also be lower.

It should be recognized that many nursing homes in some communities would find it difficult, perhaps impossible, to meet higher nurse staffing requirements, even with substantial increases in nursing wages. Under these circumstances, implementation of minimum requirements would create a demand for a procedure to waive the requirements. This was in fact what occurred when the current minimum requirements for licensed staff were first implemented under OBRA '87.

An alternative policy which might achieve the same objective of improving quality through enhanced resources for staffing would be a requirement for minimum expenditures for nurse staffing. This would permit each nursing home to allocate nursing resources to whatever configuration that in their judgment is most efficient given the labor market in their own community. In some communities, this policy might result in simply increasing staff numbers, others might direct wage increases to obtain more skilled Directors of Nursing, and still others might simply increase wages to existing staff. The effectiveness of this as a policy alternative - either as a replacement for or in combination with minimum nurse staffing requirements – depends on whether increased nursing expenditures in fact result in improved quality. An analysis conducted for this Phase II report indicates that this is indeed the case – i.e., there is strong evidence linking nursing expenditures to quality of care.

Total wages in dollars per resident day were associated with quality (i.e. not being in the worst decile) across the full range of wages for five of the quality measures described in the first section of findings above, suggesting that quality keeps improving in these areas as staffing expenditures increase. While not as strong as the relationships with staffing levels by type of staff, which held for more quality measures, this relationship with total wages suggests that minimum staffing expenditures may be another way to assure that facilities are adequately staffed. If this strategy is used, it would be wise to also include a minimum requirement for licensed staff, which seems to be necessary to help prevent poor care in quality areas not associated with total wages (e.g. respiratory infections, weight loss). With no clear threshold for total wages, the tradeoff between cost of additional staff and impact on quality would need to be assessed to determine where to set a minimum.

Appropriateness Issue: Does The Current Nursing Workforce Shortage Contribute To High Turnover And Retention Problems Which Adversely Affect Quality? If So, Can Turnover Be Reduced Within The Current Environment?

As intuitively obvious as these presumed relationships may appear, the supporting evidence is rather slim. This is due, in part, to the absence of national data sources for turnover, and the questionable accuracy of the data for the smaller samples that are reported in the research literature. In many of the studies, the statistical models are weak. And it is possible that the relationships do not exist, or more likely, they are much weaker than presumed. Despite the general absence of direct evidence, there is a compelling rationale on the relationship between staff shortage and turnover/retention and the impact of both on resident quality of care. It is argued that high turnover compromises the continuity of care and supervision of staff. Further, several qualitative studies of nursing aides have pointed to the common perception of insufficient time to do needed care processes, not performing ("cutting corners") essential tasks, and the consequence stress and motivation of nursing aides to leave their jobs. [An analogous set of propositions could be formulated with respect to staff retention; the results of a statistical analysis are discussed below.]

What is not in doubt, however, is that the current level of turnover is quite high compared to other occupations, with several studies pointing to RN and CNA turnover rates above 50 percent and 100 percent, respectively. Statistical studies have pointed to the importance of wages, benefits, staffing levels, facility characteristics, and local labor market and economic conditions. An analysis was conducted for this Report which analyzed the impact of these factors on turnover with newly available 1999 turnover data for three states—California, Kansas, and Wisconsin. Relative to other sectors of the labor force, turnover rates in all three states were high, especially for nurse aides. Additionally, there was considerable variation in turnover levels across facilities. Evidence was mixed regarding the impact of wage rates on turnover. In California, however, nurse aide turnover was significantly lower at facilities with higher nurse aide wage rates. Benefit levels appeared to impact turnover much more than wage rates. Evidence was also mixed regarding the impact of staffing levels on turnover. Across all three states, turnover was significantly higher at for-profit facilities. Among the county level measures examined only the per capita income measure was related to turnover.

The findings and other considerations discussed in the Phase II Report suggest that a number of state programs and policies – e.g., Wage Pass Throughs (WPTs) and higher minimal staffing requirements – are unlikely to significantly reduce turnover. Moreover, overall statistical performance of the turnover models was modest. This suggests the potential importance of factors that we were not able to measure, such as the management practices described above.

Nursing Staff Turnover Variation Within A Single Labor Market

Notwithstanding the above cautions, there is evidence supporting optimism about the potential effectiveness of a number of private initiatives to improve quality, staff recruitment and retention. The above three state analysis demonstrated considerable variability in turnover and retention among facilities within each state. Not only is there considerable variability within the examined states, but also within the same zip code, a very conservative specification of the local labor market. Thus it appears that the local labor market and other economic factors, while contributing to the generally high level of turnover, is not inconsistent with finding considerable variability within the same market.

A qualitative study was conducted for this Phase II report to complement the quantitative study described above. The research was conducted to answer the basic questions: Why does turnover among nursing staff vary so widely in long term care institutions, even among facilities in the same labor market? Also, what difference can management practices make in helping to understand the mechanisms for either high or low turnover? This research was conducted during spring and summer of 2001 in nine long-term care facilities in the three states noted above. The investigator gathered information directly from providers and staff about management practices and other factors that might affect nursing staff recruitment and retention. Facilities were selected in the top and bottom quartile of turnover, within the same labor market. The investigator conducted field studies at one or more "pairs" of facilities in each state. This study was designed to delve deeply into the reasons for turnover in a local labor market where NAs and other nursing staff had real choices of where to work, and why the workers themselves chose to stay at one facility and not at another. The fact that some nursing facilities exhibit very low turnover compared to nearby others when hiring and employing the same workforce makes some typical labor market explanations that identify a workforce problem of limited use.

The findings revealed that many specific managerial practices differed characteristically between low-turnover and high-turnover facilities. Overall, however, five areas stand out as distinguishing facilities with low nursing staff turnover. The five patterns found in this study to be associated with lower nursing turnover are:

- ∃ High quality leadership and management, offering recognition, meaning, and feedback as well as the opportunity to see one's work as valued and valuable; managers who built on the intrinsic motivation of workers in this field;

- ∃ An organizational culture, communicated by managers, families, supervisors, and nurses themselves, of valuing and respecting the nursing caregivers themselves as well as residents;

- ∃ Basic positive or 'high performance' Human Resource policies, including wages and benefits but also in the areas of 'soft' skills and flexibility, training and career ladders, scheduling, realistic job previews, etc.;

- ∃ Thoughtful and effective, motivational work organization and care practices; and

- ∃ Adequate staffing ratios and support for giving high quality care.

In sum, there appears to be a number of effective management practices resulting in reduced turnover that can and are implemented in many nursing homes, nursing homes operating within the current nursing shortage and without any additional resources that were identified.

Appropriateness Issue: Are Existing Nurse Staffing Data Sufficiently Accurate For Determining Compliance With Any Nurse Staffing Requirement That Might Be Implemented?

Enforcement of any federal or state proposed minimum staffing requirement for nursing facilities will necessitate an accurate nurse staffing measure that can be used to monitor compliance with the regulation. Even if minimum staffing requirements are not implemented, accurate staffing data are necessary to provide more information to consumers regarding nursing facility services. The Phase I report found that the current data sources for the reporting of nursing home staffing, OSCAR and State Medicaid Cost Reports, are often inaccurate. The goal of this task in the staffing study was to develop a mechanism to capture more accurate nurse staffing data.

During the Phase I report, payroll data were collected from nursing facilities in Ohio to assess the validity and reliability of staffing measures from OSCAR and Medicaid Cost Report data. The payroll data collection activity was designed to provide a "gold standard" measure for testing the accuracy of these staffing data. The goal in Phase II was to test the feasibility of collecting an expanded number of staffing variables from payroll records and contract agency staffing invoices. Staffing variables sought in this task included information on nurse staffing by licensure type (RN, LPN, NA), hours worked by unit, shift, day of the week, direct care vs. administrative hours and hours caring for Medicare vs. non-Medicare residents.

In Phase II, a nurse staffing data collection tool was developed and tested in 38 facilities in four states. Volunteer facilities were provided with the tool and asked to complete it. Nurse researcher consultants then visited the facilities to audit the completed tool against the source documents of payroll records and contract agency invoices. Through the examination of these records and interviews with facility staff, certain conclusions as to the feasibility of extracting staffing information from payroll records and contract invoices were drawn. There appears to be a great deal of variability in facility payroll records. Currently, the only staffing variable readily available from payroll records and contract agency invoices is total nurse staffing hours by licensure type (RN, LPN, NA). Extraction of this variable, although possible, is tedious as in most facilities the process requires the removal of hours paid but

not worked (e.g., sick leave, vacation) from total hours to determine hours worked. The verification process was far from what had been envisioned (i.e., simply comparing a number in the payroll record or invoice to a number reported by the facility on the tool). The research team's original thoughts that verification could be incorporated into the survey process appear unrealistic based on the current state of facility records. Electronic submission of a limited set of staffing variables would perhaps be a more feasible way to track and monitor facility staffing information.

Appropriateness Issue: Is The Cost Of Implementing Nurse Staffing Ratio Requirements So High As To Preclude Its Feasibility?

A *preliminary* analysis by CMS's Office of the Actuary indicated that the total national incremental cost of implementing the "preferred" minimum nurse staffing ratios identified in the Phase I analysis is on the order of $7.6 billion for CY 2001. Given that the Phase II thresholds are somewhat higher than the Phase I preferred minimums, we would expect these new thresholds to result in somewhat higher cost estimates. Ongoing work continues on the total resources to implement the staffing thresholds identified in this Phase II report. A definitive answer is not available at this time. However, the Actuary's estimate provides some sense of the order of magnitude required. A national incremental *nursing home* cost of 7.6 billion dollars represents an 8.4 percent increase over current expenditures – a substantial increase to be sure, but not so high as to preclude its feasibility. [It is also estimated that implementing the staffing thresholds would result in $1.9 billion in incremental cost to the non-nursing home health sector and a $0.5 billion cost saving due to reduced hospitalizations.] Further, implementation of lower thresholds would result in lower costs, but still result in improved nursing home quality.

As a partial effort toward understanding the potential cost implications of a minimum nurse staffing ratio for nursing homes, it is important to understand the amount of nursing care that is currently paid for by the Medicare programs. This is because the costs to the government associated with a staffing requirement can be thought of as the marginal costs of adequately paying facilities to staff at the minimum level relative to current payment levels.

Medicare expenditures under PPS related to nursing care were $2.56 billion in 1998, or $62 per resident day. This figure was somewhat less than what nursing expenditures would be if they were based on minutes from the staff time measurement data that was one source used by CMS to set Medicare nursing home payment rates. It is, however, close to what costs to facilities would be to staff at the minimum thresholds identified in chapter 2 of the Phase II report. In 1998 dollars, we estimate that it would cost facilities about $54 per day to staff at the thresholds identified by the short stay analyses and $63 per day to staff at the minimum levels identified by the long-stay analyses.

Some facilities would have to increase staffing levels substantially if a staffing minimum were implemented, but it appears that the PPS payment related to nursing care is nearly adequate for facilities to staff at the minimum required level, at least for Medicare residents.

However, as noted above, implementing the thresholds would result in some general wage inflation that would impact the non-nursing home sector.

Appropriateness Issue: Apart From Total Costs, What Are The Policy Issues For Public Payers That Need To Be Considered?

A policy analysis was conducted for this report which incorporates information from interviews with knowledgeable people representing a range of perspectives and experience, including Medicaid officials and providers in four states with state programs that offer potential models for elements of a national program.

The cost for public payers and the effect of new requirements and accompanying payments depends on programmatic design details. This is illustrated well by the different results of different approaches to estimating the potential cost of new minimum staffing requirements, discussed in chapter 10 of the Phase II report. In one approach, the cost of paying for adequate staffing is computed independently and then compared to what Medicare is currently paying for the nursing component of Medicare rates. That analysis suggests that a new minimum could be nearly cost free to Medicare, *if adequate payments for meeting minimums were the only issue*. Another analysis estimates the cost of bringing all nursing homes up to a new minimum staffing level, regardless of what homes are already getting in Medicare rates — that is, the cost of all the "missing staff" is first computed and then a share of that cost is allocated to Medicare. That approach suggests somewhat increased Medicare costs. A key difference between the two is that the second assumes that Medicare would supplement existing payments with an "add-on" sufficient to pay for "missing staff," regardless of the adequacy of current rates.
Differences between those two methods for estimating the cost of a new minimum staffing requirement are more than technical matters, to be best left to actuaries, economists and similar experts. Differences between the two methods are foremost a debate about accountability for Medicare and Medicaid monies. And in that issue lies the sharpest fissure dividing parties to the general debate. Thus, the choice between those two payment approaches is one of the most contentious that policy makers face at the state and federal levels.

Decisions about that and similar issues require policy-makers to strike an appropriate balance among competing objectives: spending sufficient money (both in rates and administrative costs) to achieve staffing objectives; reasonable cost containment; administrative feasibility; and equity. Equity is a particularly complex issue. It involves federal state relationships in general; equity among states with regard to any new federal funds (e.g., should states that have financed higher staffing levels for years get less of any new money than states that have lower staffing rates?); accountability and commitments to residents, taxpayers, and providers.

3. Importance Of Staffing-Relevant Factors Other Than Staffing Numbers/Ratios

A comprehensive assessment of the appropriateness of minimum staffing ratio requirements should also incorporate some assessment of the importance of staffing-relevant factors other than staffing numbers/ratios. Specifically, there is the question of whether nursing homes that fall below these thresholds could substantially mitigate quality problems with better management practices, including improved training. The study addressed this concern with three different analyses: qualitative case studies of management practices related to staffing; qualitative analysis of current nurse aide training practices; and a statistical analysis of the impact of a specific nonratio staffing factor, retention, on quality of care.

Qualitative Case Studies

Site visits were conducted at 17 nursing facilities in 3 states, involving observations and interviews conducted over all shifts and all days of the week, during about 10 days per facility. Nurse reviewers, who were experienced in long-term care and were trained in observation techniques, used both structured and unstructured methods to assess quality of care provided to individual residents in relation to the following staffing issues: staffing levels at the time of the observation, staff allocation among shifts and units, staff absences, use of agency staff, extended work hours, supervision, and nursing skills and training. These case studies revealed that the quality of resident care in nursing facilities was clearly influenced by staffing ratios; when inadequate numbers of staff were available to provide care and adequately monitor all residents, quality of care concerns were found. Even in situations where staffing levels appeared adequate, however, quality of care was compromised in many facilities, suggesting that to optimize care, staffing issues beyond minimum nurse staffing levels need to be addressed.

The relationship between quality and critical minimum staffing levels was supported by the case studies of individual facilities, units, and residents. These case studies permitted direct observation of care processes provided or not provided in contrast to the reliance on outcome measures, often self-reported, in the statistical analyses described above. When nurse staffing on particular units and shifts was particularly low by comparison to other nursing homes or the home's own routine level of staffing (i.e., they were "short-staffed"), the care provided was more likely to be inadequate. Sometimes this very low staffing did result in a serious incident, but the limited timeframe for the case studies would not permit observation of the cumulative impact of low staffing.

Below minimum staffing levels on particular units and shifts, there appears to be little facilities can do to mitigate quality problems. Above these minimum levels, addressing a number of nursing and management practices can optimize care. However, these minimum staffing levels of particular units and shifts, observed for a limited number of facilities, do not permit a comparison with the facility-wide staffing levels analyzed in the statistical analyses described above.

One way in which facilities effectively expanded capabilities was through the involvement of non-nursing staff (e.g. activities staff, single-task workers, ancillary staff, housekeeping staff) particularly during the day shift, giving NAs more time to complete their tasks. Another way was making sure that adequate staff were available during peak hours such as meal times so that all residents could be adequately monitored/assisted, and/or having more than one meal sitting so that staffing was adequate for those requiring assistance. Adequate allocation of nursing staff to Alzheimer/dementia units was a frequent problem in many facilities, particularly when staff needed to be redistributed within a facility because of absenteeism.

Absenteeism often exacerbated chronic nursing shortages, a situation that occurred particularly for NAs on the night, evening, and weekend shifts. Functioning short staffed or requesting/mandating that nursing staff work additional hours and double shifts was a common short-term solution to staff absenteeism, but this practice appeared to eventually backfire. Staff motivation declined and nursing staff tended to get tired and call-in sick more frequently, continuing the short-staffing cycle. While many facilities were resistant to using agency staff in order to deal with short staffing because staff felt burdened by the need to orient agency staff and supervise them more closely, the case studies did not reveal a higher rate of quality of care concerns among agency staff relative to regular staff. Thus, with good supervision, use of agency staff may be the least problematic option to cover staff absences.

Good management and supervision including clear guidelines and procedures, clear expectations regarding standards of care, use of tools and materials to guide practice, and consistent enforcement of standards were essential to providing high quality care. Strong leadership among Directors of Nursing (DONs) as well as unit supervisors was critical, but frequently absent, in part because no training was provided for supervisory roles in nursing facilities. In addition, better training on assessment skills and how to manage cognitively impaired residents appear to require emphasis in nursing facility staff training.

Nursing Assistant (NA) Training

Apart from the case studies, a separate analysis was conducted on NA training with a focus on determining how their education helps prepare nursing assistants to deliver high-quality care, how it fails to help, and how it might be improved in order to serve that function more effectively. The methods employed in this examination included a review of the literature; consultation with nursing assistants, trainers, researchers, policymakers and other experts in the field of nursing assistant training; field observations of nursing assistant training programs; and interviews of nursing facility staff who hire newly certified nursing assistants or are responsible for ongoing education and training of nursing assistants.

This research identified a need to evaluate the current regulations governing the hours and content of nursing assistant training programs, which were found to vary extensively across all states. Specifically, training programs vary in number of hours devoted to classroom and clinical teaching, content taught, education methods employed, instructor qualifications,

physical environment and educational resources. These characteristics were identified as contributing factors to the success and satisfaction or dissatisfaction nursing assistants experienced once they starting working in a nursing home, and to whether they remained working as a nursing assistant. Nursing assistants interviewed for this study indicated that classroom training provided only 50 percent of what they needed to know to do their job and the other 50 percent they learned informally on the job. Formal follow-up training is generally sparse, with most facilities offering only brief orientation sessions, little coaching or consistent oversight from supervisors, and repetitive monthly in-service training sessions that are not tailored to address specific areas of expressed interest or weakness among their staff or special needs exhibited by their residents. Furthermore, the cost of and access to training is a barrier to some potential workers, who need tuition assistance, classes in English as a second language, or other forms of assistance.

The analysis found that the job of a nursing home nursing assistant is relatively complex and requires comprehensive initial training supported by ongoing supervision and education. This includes more than the currently mandated 75 hours of class time and clinical work during precertification training, additional clinical training during a nursing assistant's first few months on the job to facilitate the transition from training to work, and formal supervision and continuing education throughout a nursing assistant's career. In addition to clinical skills, softer skills such as problem solving, communication and decision making must be taught, and teachers must be trained and experienced in adult education methods. For new hires, having a peer mentor or belonging to a peer support group appears to be effective in reinforcing learning, addressing specific areas that need improvement, boosting morale and improving retention. For seasoned employees, career ladders, attendance at professional conferences, and other professional advancement opportunities that recognize and reward additional learning and experience appear to improve morale and retention rates.

The conclusion from these two qualitative studies described in this section and the threshold analysis described above indicates that below *some* minimum staffing level there is little facilities can do to mitigate quality problems, although the case studies of staffing on particular units and shifts do not permit a comparison with specific facility-wide minimums identified in the statistical analysis. However, on the positive side, above these case study identified minimum thresholds care can be optimized by addressing a number of management practices, including improved training.

The Importance of Staff Retention

In general terms, staff turnover rate is defined as the numbers of staff who leave a nursing home during a time period (usually one year) divided by the average number of staff. In contrast, the staff retention rate (sometime referred to as the stability or continuity rate) is defined as the number who have been employed for the entire time period (again, usually one year). All other things being equal, we would expect that an increase in the turnover rate would result in a decrease in the retention rate. But all other things are not equal, and the correlation between the two rates appears to be quite modest, but in the expected direction

with high turnover associated with low retention. The California data, discussed above with reference to turnover, produced negative correlations between measures of turnover and retention of – .37 and – .35 for total direct nursing and nurse aides, respectively. These self-reported data are very likely subject to considerable (random) measurement error and the actual correlations are probably much higher.

Notwithstanding the likely measurement error in reported retention and turnover (and staffing levels, for that matter), the California data permitted for the first time an analysis of the impact of staff retention on the quality of care measures described above in the 10 state analysis. A strong relationship was found between nursing assistant retention and whether facilities were in the worst decile for five quality measures across almost the entire range of staff retention. Relationships between nursing assistant turnover and quality measures were weaker (only two quality measures showed a relationship) and there were thresholds above which turnover was no longer associated with quality. These findings persisted at different nursing assistant staffing levels. *The retention results in particular demonstrate the importance of other staffing factors besides staffing levels in quality of nursing home care.*

There is reason to believe that both high staff turnover and low retention can be improved with better management practices, as discussed above with reference to the case studies of low and high turnover facilities. To the degree that turnover and retention are highly correlated and the selection of case study pairs (high and low turnover facilities in the same local labor market) also selected on the basis of low and high retention, then the study's conclusion with respect to the importance of management practices on turnover would also apply with respect to improving retention and quality of care.

Conclusions

This study has generated a wide array of evidence that bears on the question Congress asked us to assess, the appropriateness of establishing minimum nurse staffing ratio requirements:

- Strong evidence supports the relationship between increases in nurse staffing ratios and avoidance of critical quality of care problems. Above identified nurse staffing thresholds, however, increased staffing does not result in improved quality. Depending on the nursing home population, these thresholds range between 2.4 – 2.8, 1.15 – 1.30, and 0.55 - 0.75 hrs/resident day for nurse aides, licensed staff (RNs and LPNs combined), and Registered Nurses, respectively. Although no significant quality improvements are observed for staffing levels above these thresholds, quality is improved with incremental increases in staffing up to and including these thresholds.

- Implementation of these maximum thresholds as requirements would find 97 percent of all nursing homes failing to meet one or more of these standards. The analysis also

indicated that implementation of thresholds lower than those above which maximize quality, would still result in substantial improvements in a smaller, yet substantial portion of all nursing homes.

- An entirely different methodology estimated that in 2000 over 91 percent of nursing homes have nurse aide staffing levels below that identified as minimally necessary to provide *all* the needed *care processes* that could benefit their specific resident population. The nurse aide staffing ratios needed to implement these care processes varied from 2.8 to 3.2 hrs. /resident day, depending on the resident mix in the nursing home.

- The study assessed the importance of staffing-relevant factors other than staffing numbers/ratios. Specifically, the study addressed the question of whether nursing homes that fall below the above identified thresholds could substantially mitigate quality problems with better management practices, including improved training. The relationship between quality and critical minimum staffing levels was supported by the case studies of individual facilities, units, and residents. Below minimum staffing levels on particular units and shifts, there appears to be little facilities can do to mitigate quality problems. But these staffing minimums, to the degree that they can be translated into facility-wide averages, are well below the thresholds discussed above which result in the maximum quality observed.

  Above these minimum levels identified in the case studies, addressing a number of nursing and management practices can optimize care. These include the involvement of non-nursing staff; facility practices with respect to absenteeism; and good management and supervision including clear guidelines and procedures, clear expectations regarding standards of care, use of tools and materials to guide practice, and consistent enforcement of standards. A separate analysis found that the job of nursing assistant is relatively complex and requires more comprehensive initial training supported by ongoing supervision and education.

- A strong relationship was found between nursing assistant retention and whether facilities were in the worst decile for five quality measures across almost the entire range of staff retention. Although in a free society and market economy high turnover and staff retention could never be subject to regulation, the results of the retention analysis demonstrate the importance of other staffing factors besides staffing levels on quality of nursing home care.

- The increased demand for nurses that would result from implementation of the staffing thresholds would require increases in the wage rates paid to nurses. The thresholds identified in chapter 2 would increase RN wage rates by between 2.5 and 7 percent, an increase of between $0.50 and $1.40 per hour, given an average RN wage rate of $20.00 per hour. For facilities to staff at the higher nurse aide levels that

would be required, nurse aide compensation would need to increase by between 10 and 22 percent, an increase of between $0.86 and $1.89 per hour. Although these estimates of wage increases necessary to meet the demand of higher staffing thresholds are substantial, they are not so high as to preclude the possibility of implementing the thresholds.

- *An alternative policy which might achieve the same objective of improving quality through enhanced resources for staffing would be a requirement for minimum expenditures for nurse staffing. This would permit each nursing home to allocate nursing resources to whatever configuration that in their judgement is most efficient given the labor market in their own community. In some communities, this policy might result in increasing staff numbers, others might direct wage increases to obtain more skilled Directors of Nursing, and still others might simply increase wages to existing staff. The effectiveness of this as a policy alternative - either as a replacement for or in combination with minimum nurse staffing requirements – depends on whether increased nursing expenditures in fact result in improved quality. An analysis conducted for this Phase II report indicates that this is indeed the case – i.e., there is strong evidence linking total nursing wages in dollars per resident day to quality of care.*

- The evidence produced for this report was inconclusive with respect to the impact of nurse staffing levels on turnover and retention problems. Even if it is established that the nursing shortage is an important determinate of turnover, this does not mean that the turnover problem cannot be addressed within the current environment. The results of a qualitative study conducted for this report indicate that there are a number of effective management practices resulting in reduced turnover that can and are implemented in many nursing homes — nursing homes operating within the current nursing shortage and without any additional resources that were identified.

- Enforcement of any federal or state proposed minimum staffing requirement for nursing facilities will necessitate an accurate nurse staffing measure that can be used to monitor compliance with the regulation. Even if minimum staffing requirements are not implemented, accurate staffing data are necessary to provide more information to consumers regarding nursing facility services. The current data sources for the reporting of nursing home staffing, OSCAR and State Medicaid Cost Reports, are often inaccurate. The research team, however, found that it was unrealistic to incorporate verification of staffing levels into the survey process based on the current state of facility records. Electronic submission of a limited set of staffing variables would perhaps be a more feasible way to track and monitor facility staff information.

- An analysis conducted for this Phase II Report indicated that Medicare expenditures under PPS related to nursing care were $2.56 billion in 1998, or $62 per resident day. This expenditure is close to what costs to facilities would be to staff at the minimum

thresholds identified in the Phase II report. Some facilities would have to increase staffing levels substantially if a staffing minimum were implemented, but it appears that the PPS payment related to nursing care is nearly adequate for facilities to staff at the minimum required level, at least for Medicare residents. In addition, a~~n~~ preliminary analysis by CMS's Office of the Actuary indicated that the total incremental nursing home cost of implementing the "preferred" minimum nurse staffing ratios identified in the Phase I analysis is on the order of $7.6 billion for CY 2001 – about an 8 percent increase over current expenditures.

- Apart from the total costs of minimum ratio requirements, there is the fundamental policy issue of how these costs are distributed among providers, public payers (Medicare and Medicaid), and private payers. In addition, there are questions about how policy-makers strike an appropriate balance among competing objectives: spending sufficient money (both in rates and administrative costs) to achieve staffing objectives; reasonable cost containment; administrative feasibility; accountability; and equity.

In addition, there is considerable discussion in provider trade publications (and some in scholarly journals, with additional research underway) suggesting various approaches that should be tried to improve staffing levels in a tight market and/or make more efficient use of current staff. However, relevant systematic program evaluations with national application are not available to help guide policy-makers choices. Thus, substantial uncertainty regarding the *optimal* approach to addressing staffing issues will not be resolved in the near term.

While stopping short of making specific policy recommendations, this Phase II report provides an empirical basis for any policy debate and initiatives related to nursing home staffing.

3.0 Minimum Nurse Aide Staffing Required to Implement Best Practice Care in Nursing Facilities2

3.1 Purpose

This report examines nursing facilities (NF) staffing levels necessary to implement care processes associated with positive resident outcomes and identifies how these minimum staffing levels vary depending on the needs of the resident population.

3.2 Background

In the summer of 2000, CMS released a report to Congress entitled, *The Appropriateness of Minimum Nurse Aide Staffing Ratios in Nursing Homes.*[1] This report presented findings from two separate but complementary studies undertaken by two research teams to answer the question, "What should minimum resident-to-nurse-aide staffing ratios be in nursing facilities?" The studies used two different methodologies and addressed two different facets of the research question. Not surprisingly, they arrived at two different answers.

One study focused on the relationship between NF staffing levels and resident outcomes, such as the prevalence of weight loss or pressure sores. This outcomes study retrieved staffing information, hospitalization data, and Minimum Data Set information from nursing facilities in three states.

In contrast, the second study, which is the focus of this chapter, *did* address minimum staffing levels necessary to achieve "good" nursing facility care. Using a different methodology and database than the "outcomes" study, this study examined staffing levels necessary to implement daily care processes in nursing facilities. Five care processes were identified that met two criteria:

- The care processes were associated, either through research evidence or expert consensus, with positive resident outcomes, such as improved quality of life or improved functional status.

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2 This chapter was written by John F. Schnelle, Ph.D., Borun Center for Gerontological Research, Los Angeles Jewish Home for the Aging, UCLA School of Medicine, and Sepulveda VA; Sandra F. Simmons, Ph.D., Borun Center for Gerontological Research, Los Angeles Jewish Home for the Aging, UCLA School of Medicine; Shan Cretin, RAND Corporation. Section 3.11 was written by Marvin Feuerberg Ph.D., CMS, with the concurrence of John Schnelle and the assistance of Ed Mortimore, CMS, and Yi-Fei Hu, West Virginia Medical Institute. Dr. Emmett Keeler of the RAND Corporation conducted the workload analysis and Michael Lin of the University of Colorado provided the programming needed to identify variation in resident acuity between homes. Editorial assistance was provided by Anna Rahman.

- There were research data available relevant to how labor intensive it is to implement each care process.

The five care processes that met these two inclusion criteria were:

1. Consistently changing wet linens for incontinent residents who *could not* successfully toilet if given assistance;
2. Providing timely toileting assistance for incontinent residents who *could* successfully toilet;
3. Providing feeding assistance to either physically dependent residents or those with low food intake;
4. Providing exercise to all residents; and
5. Providing assistance that enhances the ability of residents to dress and groom independently.

The study used the available labor intensity data for each care process and a simulation analytic strategy to identify the staffing requirements needed to implement all five of these care processes in nursing facilities. The research question addressed in this "process" study was, "What is the minimum nurse-aide staffing level required to implement care processes that are associated with positive resident outcomes?"

One would expect different staffing projections from the "process" and "outcome" studies because the outcome study attempted to identify minimum staffing levels that signified "bad" care, whereas the process study attempted to identify minimum staffing levels needed to provide "good" care. This expectation was confirmed: the process study showed that 2.9 nurse aide hours per resident per day are necessary to provide "good" care associated with positive outcomes in contrast to the outcome study's estimate that less than 2.0 nurse aide hours per resident per day is likely to result in "poor" care.

One limitation of the process study was that the minimum staffing levels required to implement the five care processes were projected only for an average nursing facilities. Many nursing facilities, however, are not average in the sense that they vary widely in terms of the residents they serve and the care requirements of these residents. In other words, NFs vary in terms of the proportion of residents who need the care processes (e.g., incontinence care or feeding assistance) that were the focus of analysis in this study. Given this, a *range* of minimum staffing ratios is a more meaningful statistic on which to base staffing recommendations than the *average* that was reported in the original study. This report will describe a methodology and research strategy for estimating the range of minimum staffing ratios minimally required to provide good nursing facility care and then present the findings from this research. First, however, investigators will describe the logic of our research approach and discuss some of the features that make this approach particularly appropriate for addressing the primary research question, What should minimum nurse aide staffing ratios in nursing facilities be?

3.3 This Study Estimates the Nurse Aide Staffing Minimally Necessary to Provide a Level of Care Consistent with Federal Quality Standards

The intent of OBRA 1987 and the Federal regulations that were generated by OBRA was to set a standard for achieving the highest practical well being for nursing facility residents. OBRA's intent was not to develop care standards that would prevent *poor outcomes*, but rather to develop standards that would produce *good care*. Together the five care processes examined in this study represent care that is consistent with achieving the highest practical well being for nursing facility residents.3 This conclusion is based both on empirical findings reported in the research literature and practice guidelines developed by expert consensus panels. Furthermore, the care processes analyzed in this study are specifically mandated in Federal survey standards, which have attempted to operationalize the OBRA standards to facilitate a quality inspection of nursing facilities.4 Thus, the analytical strategies described in this report provide the most direct approach available to estimate minimum staffing levels necessary to implement Federally mandated care requirements.

3.4 Processes that Define "Good" Care can be Empirically Translated into Minimum Labor Requirements

As mentioned previously, this study included care processes only if an evidence-based case could be made that each process constitutes "good" care that contributes to the well being of residents. The second criteria required that data be available to estimate how labor-intensive it is to implement each care process. These labor-intensity data relate to three domains:

- Information about the average and variation in the time required to implement each care process;
- Information about the number of residents who need the care process; and
- Information about how much time it takes for NF staff to locate residents to provide care.

This information was either retrieved from empirical studies reported in the professional literature or generated from reasonable assumptions based on the best information available. As noted in the original report, some of the "best available" data is incomplete or of suspect quality; a widespread problem in this less-than-perfect industry and one that affects many NF studies, including the previously cited outcomes study, which relies partly on information from resident charts, and the MDS, which are also subject to error. The most important point here, however, is that the time requirements to implement the five care processes are based

3 See CMS's Phase 1 nurse staffing report (chapter 4), CFR 483.25, and Section 6.5.2 below for more detailed discussion of OBRA '87 statutes and derivative regulations.

4 It is acknowledged that the exercise activities included in the simulation model, beneficial care processes supported by research literature, probably exceed the explicit regulatory requirements for range of motion exercises and ambulation.

not on theoretical speculation, but rather on empirical data or reasonable assumptions generated from the best available data.

These labor-intensity data can be converted mathematically into estimates of the minimum staffing ratios needed to implement all five care processes using simulation analytic strategies. Simulation is an analytical approach designed to identify outcomes associated with different staffing levels and work scenarios. Simulation is a flexible tool that is especially appropriate for evaluating the effects of a nursing facility's physical layout, staffing levels, and service scheduling on the level of services provided, resident waiting time, and staff workload. The simulation models do not create data to predict theoretical outcomes nor are they based on theoretical "unknowns." On the contrary, they take what is known and use these "givens" to mathematically predict outcomes, usually with a high degree of accuracy. Consider a simple example where it is "given" that a car, going at 60 miles an hour, must travel a distance of 120 miles. If one inputs this rate and distance data into a simulation model, the model will predict that the car will reach its destination in two hours. In the study reported here, the simulation models took into account more and somewhat more complex "givens," such as the amount of time needed to provide a service, variability in these service times, the number of residents who need that service, and nurse-aide travel time from one resident to another. Nevertheless, the simulation models' predicted outcomes are as straightforward and as inevitable as the predicted outcome in our example. Again, this is because simulation is an analytical approach that mathematically models a realistic work scenario based on specific input data that characterizes that particular work situation. The models can be generated only if specific data about the work scenario — in other words, the "givens" – are available.

Simulation has been used as an analytic tool in many areas of health care, including emergency departments,[2] operating rooms and surgical suites, [3,4] clinic applications,[5,6] and inpatient applications.[7,8] Many health-care organizations routinely use simulation technologies to predict staffing needs. So, too, do service industries, manufacturers, and government agencies such as the defense department.

MedModel™, a PC-based program, allowed researchers to model both the physical layout of a typical nursing unit and characteristics of the residents. Simulation has the advantage of allowing one to model several realistic work scenarios that take into account factors such as:

- observed variation in the amount of time needed to deliver a service;
- the amount of time nurse aides need to travel from one resident to another;
- the need to accommodate break periods for staff;
- the fact that some services (e.g., morning care and feeding assistance) must be delivered within a relatively narrow time frame, while other care activities (e.g., shower assistance, putting away clean laundry, and exercise) can be worked into available slack periods during the day; and

- the need to accommodate unscheduled events, which may occur at different rates throughout the day.

The computer program's output includes shift-by-shift estimates of workload, estimates of time spent in direct resident care and in travel, estimates of the total minutes devoted to each of the recommended care processes, and the approximate time of day when time-critical services were completed on all residents. In addition to estimating the number of staff needed to complete all five care processes for all residents who needed the services, simulation strategies allowed researchers to generate and validate the effects of variations in staffing levels on the ability of NFs to consistently implement all five care processes. This ability to validate the staffing predictions of simulation models is a particularly important feature of the analytic strategy, and one that makes this strategy highly relevant to efforts to address minimum staffing questions.

3.5 Predictions of Simulation Models can be Efficiently and Scientifically Validated

The research methodology used in this study not only provided very specific predictions about minimum staffing ratios needed to consistently implement all five care processes, but it also predicted outcomes when staffing fell below these minimum levels. For example, in the initial simulation analysis, described in the first report, investigators used staffing levels that typified most of the nation's nursing facilities and assumed that nurse aides worked at probably unrealistically high productivity levels. Based on these assumptions, or "givens," the model predicted that more than 50 percent of nursing facility residents would not receive all five care processes as needed. The first report also cited direct observational data that confirmed this prediction.[9] In these observational studies, investigators working independently of this CMS study reported that staff in typical NFs did not consistently provide feeding assistance, incontinence care, or exercise to most residents.

The fact that the staffing predictions generated by the simulation models could be scientifically validated reflected the applied advantages of this research approach. Though it is not part of the current project to validate these staffing predictions, one could do so fairly easily and efficiently, in part because the CMS-sponsored outcomes study has already described variations in staffing levels across a large number of the nation's NFs. One could use these staffing data to identify NFs that vary across the staffing continuum and then validate the predictions made by the simulation model for homes with various staffing levels. For example, the most obvious hypothesis relevant to CMS's already completed minimum staffing work is that facilities with nurse-aide staffing levels above 2.9 hours per resident per day (the predicted minimum for implementing all five care processes, according to the process study) are significantly better at care process implementation than NFs that fall below this level assuming equal levels of staff productivity. Observational protocols to objectively describe how well the care processes are being implemented are available to test this and other important hypotheses relevant to the staffing questions that are driving CMS's

work in this area. Together, the process study and outcomes study have set the stage for a definitive analysis of NF staffing requirements, which will lead to equally definitive conclusions about minimum staffing.

In summary, the research model described in this report provides a direct, non-theoretical approach to estimating minimum staffing requirements necessary to provide "good" care in NFs. In addition, the model also provides a framework for predicting poor care in NFs that fail to meet these staffing requirements. This methodology can be used to both predict and validate the impact of the different minimum staffing ratios that are being considered as mandated standards for NF.

3.6 How the Current Report Extends and Improves Estimates of Minimum Staffing to Implement the Five Targeted Care Processes

In order to identify the staffing levels needed to implement the five care processes associated with good care, investigators must first identify the proportion of NF residents who need each of several different combinations of the care processes. For example, research staff need to know what proportion of residents need both incontinence care and help with feeding vs. the proportion of residents who need only help with feeding vs. the proportion of residents who are independent in both areas. For each set of residents (and there are more sets, or resident categories, than these three examples), a different amount of staff time will be required to provide "good" care. For example, residents who need both incontinence care and help with feeding will require more staff time than continent residents who can eat independently.

Table 3.1, reproduced from the original CMS report, illustrates the initial effort to identify the proportion of residents who need different combinations of the five care processes. Column 1 in this Table 3.1, reproduced from the original CMS report, illustrates the initial effort to identify the table lists six categories that reflect residents' needs for the five care processes. These categories were constructed based on both empirical data in the research literature and some reasonable assumptions because there are no published data that specifically report the percentage of NF residents who need each of the different care-process *combinations*. There are, however, data that describe the prevalence of each functional disability in isolation (e.g., prevalence of just urinary incontinence in NF residents). There are also other data that describe associations between different disabilities (e.g., a strong positive correlation between incontinence and inability to walk independently). Investigators used both types of data in the first report to indirectly construct the resident categories in Table 3.1.

Table 3.1. Input Data from Original CMS Report

Patient type	Percent of Residents	AM CARE Time	AM CARE Frequency	EXERCISE Time	EXERCISE Frequency	CHANGE OR TOILETING Time	CHANGE OR TOILETING Frequency	REPOSITIONING Time	REPOSITIONING Frequency
1. Continent, Independently ambulatory, no diapers, no need for repositioning, no need for ADL enhancements, fully independent eating Frequency: 15% (6 of 40)	15.0%	2	1	30	0.500	0	0	0	0
Standard deviation/Frequency unit			per day		3.5 times/week				
2. Continent, Independently ambulatory, no diapers, no need for repositioning, ADL enhancements needed, fully independent eating Frequency: 15% (6 of 40)	15.0%	11	1	30	0.500	0	0	0	0
Standard deviation/Frequency unit		7	per day		3.5 times/week				
3. Incontinent, Assisted ambulation, day toilet/night diapers, repositioning needed, ADL enhancements needed, fully independent eating Frequency: 20% (8 of 40)	20.0%	14	1	6	3.000	6	7	3.5	3
Standard deviation/Frequency unit		7	per day		per day	7 (day)5 (night);sd2	per day		per day
4. Incontinent, Assisted ambulation, 24 hour diapers, repositioning needed, ADL enhancements needed, semi dependent eating Frequency: 40% (16 of 40)	40.0%	14	1	6	3.000	5	8	3.5	2
Standard deviation/Frequency unit		7	per day		per day	2	per day		per day
5. Incontinent, Assisted ambulation, 24 hour diapers, repositioning needed, ADL enhancements needed, dependent eating Frequency: 4.5% (2 of 40)	5.0%	14	1	6	3.000	5	8	3.5	2
Standard deviation/Frequency unit		7	per day		per day	2	per day		per day
6. Incontinent, Bed bound, 24 hour diapers, repositioning needed, ADL enhancements needed, dependent eating Frequency: 5.0% (2 of 40)	5.0%	14	1	2	3.000	5	8	3.5	2
Standard deviation/Frequency unit		7	per day			2	per day		per day
Average time per patient (over all patients):		11.75		16.50		28.40		5.60	

Note: Shift report time (10 minutes per day) is not presented in this table which illustrates care frequency per day and time on a per-resident basis. A total of 10 minutes of aide time for all residents is assigned to shift report and documentation. The AM and PM care does not include incontinence care, and repositioning may be combined with toileting or changes.

Table 3.1 (continued). Input Data from Original CMS Report

Patient type	Percent of Residents	GROUP FEEDING ASSISTANCE Time	GROUP FEEDING ASSISTANCE Frequency	SHOWER Time	SHOWER Frequency	PM CARE Time	PM CARE Frequency	HOUSEKEEPING Time	HOUSEKEEPING Frequency
1. Continent, Independently ambulatory, no diapers, no need for repositioning, no need for ADL enhancements, fully independent eating Frequency: 15% (6 of 40)	15.0%	1	3	15	0.250	2	1	5	2
Standard deviation/Frequency unit			per day		1.75 times/week		per day		per day
2. Continent, Independently ambulatory, no diapers, no need for repositioning, ADL enhancements needed, fully independent eating Frequency: 15% (6 of 40)	15.0%	1	3	15	0.250	11	1	5	2
Standard deviation/Frequency unit			per day		1.75 times/week	7	per day		per day
3. Incontinent, Assisted ambulation, day toilet/night diapers, repositioning needed, ADL enhancements needed, fully independent eating Frequency: 20% (8 of 40)	20.0%	1	3	15	0.250	14	1	5	2
Standard deviation/Frequency unit			per day		1.75 times/week	7	per day		per day
4. Incontinent, Assisted ambulation, 24 hour diapers, repositioning needed, ADL enhancements needed, semi dependent eating Frequency: 40% (16 of 40)	40.0%	7.5	3	15	0.250	14	1	5	2
Standard deviation/Frequency unit		in groups of 4	per day		1.75 times/week	7	per day		per day
5. Incontinent, Assisted ambulation, 24 hour diapers, repositioning needed, ADL enhancements needed, dependent eating Frequency: 4.5% (2 of 40)	5.0%	22.5	3	15	0.250	14	1	5	2
Standard deviation/Frequency unit		in groups of 2	per day		1.75 times/week	7	per day		per day
6. Incontinent, Bed bound, 24 hour diapers, repositioning needed, ADL enhancements needed, dependent eating Frequency: 5.0% (2 of 40)	5.0%	22.5	3	15	0.250	14	1	5	2
Standard deviation/Frequency unit		in groups of 2	per day		1.75 times/week	7	per day		per day
Average time per patient (over all patients):		17.25		3.75		11.75		10.00	

Note: Shift report time (10 minutes per day) is not presented in this table which illustrates care frequency per day and time on a per-resident basis. A total of 10 minutes of aide time for all residents is assigned to shift report and documentation. The AM and PM care does not include incontinence care, and repositioning may be combined with toileting or changes.

To illustrate the original approach, consider row 1 in column 1, which describes a group of residents who are continent and able to dress, groom, and feed themselves independently. Investigators projected that 15 percent of the total NF population would fall into this category (Table 3.1, row 1. column 2). Investigators arrived at this estimate in the following way: Investigators first estimated that, on average, approximately 30 percent of the NF population is continent, based on research studies that actively recruited residents for incontinence interventions and reported an incontinence prevalence rate of approximately 70 percent. Investigators then projected that about 50 percent of all continent residents, or 15 percent of the total NF population (i.e., half of the 30 percent who were considered continent), would be able to feed, dress, and groom themselves independently. This projection was based primarily on one study which reported that 15 percent of all NF residents need no assistance in any activities of daily living (ADLs). This latter study did not report whether all of these independent residents were continent, but there was good reason to assume that they might be because other studies have reported positive associations between incontinence and increased probability of ADL deficits in other areas. Based on all of these data, investigators projected that all residents who were independent in dressing, feeding, and grooming were probably also continent. Using this kind of logical reasoning, investigators estimated the percentage of residents who would fall into each of the six resident categories (Table 3.1, column 2). The original report provides a more complete description of the data and logic that guided the construction of these categories.

In this current study, investigators improved the methodology by taking a more direct approach to identifying the care-process combinations required by residents and for estimating the proportion of residents who need each combination. This new approach allowed for the identification of three types of NFs that differed significantly from one another with regard to the labor requirements needed to implement the five care processes. These differences stemmed from variations in each facility's resident population (e.g., some NFs care for a higher percentage of residents who required feeding assistance than others). Investigators selected three NFs that reflected a low, medium, and high workload to serve as models for the computer simulations. These simulations were conducted to identify for each of these three NFs the minimum staffing levels necessary to provide good care. Investigators also improved, for this report, the estimates of the time needed to implement the following care processes:

1. Exercise for incontinent residents;
2. Feeding assistance for residents who are both responsive and unresponsive;
3. Number of random events that occur during a shift and the time consumed by such random events; and
4. Travel times to provide incontinence, exercise, and feeding assistance.

The time data for the exercise care processes for incontinent residents were generated from a randomized clinical trial in which 180 residents were assigned to intervention and control groups. The average time required to implement the exercise for the 90 residents assigned to the intervention group was 10 minutes per resident with a standard deviation of 3 when travel time was not considered.[10] Investigators modeled variability for this type of exercise by using a

triangular distribution with a minimum of four minutes, a mode of eight minutes, and a maximum of 18 minutes. The time needed to provide incontinence care was essentially identical to those estimates used in the original report.

The new feeding assistance data were generated for a sample of 68 residents who participated in a trial to evaluate the efficacy of an individual and group feeding assistance intervention. The time data that investigators used in the first CMS report was based on a sub-sample of only 12 of these residents. The new data indicate that all residents receive approximately 1.25 minutes of tray set-up time per meal. Furthermore, group feeding assistance is effective with a ratio of one aide to three residents and consumes approximately 18 minutes per resident per meal with a standard deviation of 5.2 minutes (a minimum of seven minutes, mode of 15 minutes, and a maximum of 32 minutes). Finally, 50 percent of the residents proved unresponsive to feeding assistance (same proportion as estimated in previous report) but investigators collected new data describing the amount of feeding assistance that these unresponsive residents received during usual care NF conditions. Investigators used these new usual-care time data to estimate the labor requirements for these unresponsive residents since investigators know of no more effective feeding assistance intervention at this time. These new data indicated that 55 percent of the responsive residents received zero feeding assistance other than tray set-up (1.25 minutes) and that 45 percent (the more physically dependent) received an average of eight minutes of feeding assistance with a standard deviation of 4.3 minutes (minimum of one minute, mode of three minutes, and maximum of 24 minutes). Investigators also collected travel time for 74 episodes of incontinence care and 23 episodes of assisting residents to the dining room for feeding assistance. The average travel time for incontinence care was 3.5 minutes with a standard deviation of 2.97 while the average travel time for dining room transport was 1.4 minutes with a standard deviation of 1.2. Finally, over 20 hours of observations were conducted for the purpose of estimating the frequency that random events occurred and the time consumed by these events (e.g., answering residents' requests for assistance or cleaning spills). These observations were completed primarily during the time periods between 7am – 9am, 11am – 1pm, and 4pm – 6pm. Based on these observations investigators estimated that each random event consumes approximately two minutes of staff time and occurs with a predicted frequency of six, four, and two events on the 7am – 3pm, 3pm – 11pm, and 11pm – 7am shifts, respectively. The major steps involved in our new research strategy are described next.

3.7 Method

3.7.1 Identify Residents in Need of the Five Targeted Care Processes: MDS Data Analysis

An important task in the current study was to improve the methodology used to distribute residents into categories, which describe the various combinations of the care processes. Investigators accomplished this task by taking advantage of the Minimum Data Set (MDS) information that was available for this project from New York and Ohio. These New York and Ohio MDS data that were available for this study were used in the previously described outcomes study that was designed to identify the staffing levels which predicted poor care.

The MDS is a comprehensive assessment instrument that NF staff are required by federal regulation to complete for all residents on a scheduled basis. Most relevant to this study, the MDS provides data that describes each resident's continence status (bowel and bladder) and rates his or her need for feeding, dressing, and grooming assistance. Data from 674 New York facilities and 972 Ohio facilities were analyzed for the year 1996. This analysis allowed researchers to directly identify the proportion of residents in all NFs in New York and Ohio who needed each of the different care-process combinations.

Table 3.2 lists the resident categories used in our analysis. These categories reflect each of the different care-process combinations. In contrast to the original analysis, which used six resident categories (Table 3.1), the current analysis used nine: the six original categories plus three new ones. The MDS variables and programming rules used to construct each category are presented within brackets in each row of Table 3.2. For example, row 1 describes residents who are continent (scored 0 on both MDS items that reflect continence: H1A=0 and H1B=0) and completely independent in dressing, grooming, and eating (scored 0 or independent on MDS items for grooming, dressing, feeding; g or j and h = 0). This group of residents is the same as the group of residents described in row 1 of Table 3.1.

Table 3.2
Percent of Residents in New York and Ohio in Different Categories

	RESIDENT CATEGORIES	NEW YORK	OHIO
1	Continent: bowel and bladder: independent eating, dressing, and grooming [H1A0 and H1B0 and G1A g or j and h = 0]	5.13	2.47
2	Continent: assistance needed in dressing, grooming – independent feeding [H1A0 and H1B0 and G1A g or j ≥ 1; h = 0]	11.5	9.4
3	Continent: ADL assistance needed in dressing, grooming, and eating [H1A0 and H1B0 and G1A g or j ≥ 1; h ≥ 1]	11.5	19.0
4	Continent: no assistance in dressing, grooming but some assistance in eating [H1A0 and H1B0 and G1A g or j = 0; h ≥ 1]	.04	.77
Total % Continent		**28.6**	**31.6**

Table 3.2
Percent of Residents in New York and Ohio in Different Categories

	RESIDENT CATEGORIES	NEW YORK	OHIO
5	Incontinent: either bowel or bladder – needs dressing, grooming assistance but not feeding assistance [H1A ≥ 1 or H1B ≥ 1 and G1A g or j ≥ 1 and h = 0]	13.3	8.9
6	Incontinent: either bowel or bladder: assistance needed with dressing, grooming, and some feeding assistance [H1A ≥ 1 or H1B ≥ 1 and G1A g or j ≥ 1 and h ≥ 1]	57.3	58.9
7	Incontinent: either bowel or bladder: no assistance needed with dressing, grooming, or feeding assistance [H1A ≥ 1 or H1B ≥ 1 and G1A g or j = 0 and h = 0]	.73	.43
8	Incontinent: either bowel or bladder: no assistance needed with dressing, grooming – some assistance with feeding [H1A ≥ 1 or H1B ≥ 1 and G1A g or j = 0 and h ≥ 1]	.05	.10
Total % Incontinent		**71.4**	**68.3**
9	Bed-bound* [G6A checked]	3.2	6.1

* This group subsumed under Group 6 – numbers add up to more than 100% if this category is added.

In an effort to distribute all NF residents into plausible resident categories and to test the assumption that there are positive associations between different functional disabilities (e.g., that continent residents are more independent in dressing and grooming than incontinent residents) investigators identified resident categories that were not considered in the original study. For example, in the original analysis, investigators projected that no continent residents would need feeding assistance. In the current analysis, investigators tested this assumption, analyzing the MDS data to determine whether, in fact, there were continent residents who needed help with feeding. As explained below, investigators found that there were.

Table 3.2 illustrates several important points. First, these resident categories capture 100 percent of the NH population in New York and Ohio, as can be seen by adding the percentages in rows 1 through 8. The bed-bound category (row 9) is not included in this summation because it is completely subsumed under the row 6 resident category (i.e., incontinent residents who need help with feeding, dressing, and grooming), as will be discussed later. Second, Table 3.2 shows that the proportion of residents who are continent approximates the 30 percent prevalence estimate that investigators used in the original report.

Third, the resident categories and the proportion of residents in each category appear to be clinically valid based on data reported in the professional literature and clinical experience. For example, rows 1 and 7 show that almost all residents who could dress, groom, and feed themselves were also continent. One would expect this finding as a corollary to a related

research finding reported in the professional literature: that is, as mentioned previously, that there is a strong positive association between being incontinent and having ADL deficits in other areas. The clinical validity of the data in Table 2 is further underscored when one considers rows 4 and 8. The data presented in these rows show that there are very few residents who can dress and groom themselves but need help with eating. This finding is expected given clinical data that indicate individuals lose the ability to dress and groom themselves well before they lose the ability to feed themselves.

A fourth point worth noting, and mentioned previously, is that this current analysis identified two new resident categories that were not identified in the original report. The most important new category appears in row 3, which shows there is a substantial proportion of continent residents who require some assistance with feeding (and dressing, grooming). Investigators originally projected that no continent residents would need feeding assistance based on the untested, and apparently incorrect, assumption that the very strong associations reported between continence status and independence in other ADL areas would also extend to the feeding area. On a more minor note, row 7 describes another new resident category comprised of a very small percentage of residents (about 1 percent) who are incontinent but require no assistance in other ADL areas. It is not surprising that this proportion is small, given that the primary risk factors for urinary incontinence in NF residents are dementia and mobility deficits, which in turn means that most incontinent residents would likely need help in other ADL areas. However, a small proportion of residents in this category does reflect a clinical reality. It is known that there are some ambulatory and cognitively intact NF residents who are incontinent primarily due to the same medical factors that contribute to incontinence in a community population (e.g., stress incontinence).

A fifth point to note is that there are only relatively small differences between the New York and Ohio data, which one might expect with such large samples of residents. These similarities suggest that the two state NF populations could be combined for some analyses. Our final point with regard to Table 3.2 is that the proportion of residents who are classified as bed-bound in both states approximates the proportion of residents that investigators estimated to be bed-bound in the original CMS study. It should also be noted that virtually all of the bed-bound residents, not surprisingly, show the same characteristics of residents in category 6; that is, they are incontinent and need assistance with dressing and grooming as well as some help with feeding. Given this, investigators combined the bed-bound residents with residents in category 6; thus, effectively investigators used only eight resident categories in the further work load analyses.

The next step in the analysis was to identify how resident populations vary at the facility level with respect to the different resident categories. This in turn would indicate the degree to which staffing requirements vary from one facility to another.

3.7.2 Identify Nursing Facilities that Vary in Staffing Requirements to Implement the Five Care Processes

To deal with uncertainties in modeling, policy analysts are advised to conduct sensitivity analyses.[11] To do so, analysts study the impact on results of varying assumptions on key parameters across a wide but plausible range. The goal is an understanding of how results vary with assumptions, and the development of flexible policies that will be satisfactory across a wide range of conditions and developments. This section describes some analyses undertaken to develop a small set (three) of typical NFs that could represent the spectrum of workloads that are commonly seen.

Our goal for this study was to identify a set of NFs whose resident populations would represent a range of demands for staff assistance. Initially, investigators attempted to identify clusters of NFs with similar resident mixes, but these mixes varied widely across facilities, without any clear clusters. Instead, investigators divided the NFs into three separate groups based on each facility's average workload, and then created a representative nursing facility for the low, middle, and high work groups.

Investigators used the 1996 MDS data from both states and dropped the 34 percent of homes in the database with less than 10 residents per facility, based on the assumption that these data were either incomplete or reflected small hospital-based facilities, which are atypical of most NFs.

Staff burden varies with the percentage of residents who need different types of care. Given this, NF residents were initially grouped separately by state according to the eight categories listed in Table 3.2, and investigators did not see major differences between states. As noted previously, these categories reflect the different care combinations needed by residents and thus, the different staffing levels required. Again, investigators did not include in this analysis category 9, the "bed-bound" category, because virtually all of these residents were included in category 6 (incontinent, needs assistance with dressing, grooming, and feeding). In Table 3.3, investigators report the percentage of *all* NF residents, in New York and Ohio combined, in each of the eight categories.

Table 3.3
Distribution of Residents in New York and Ohio Across Resident Categories with Different "Work" Values

RESIDENT CATEGORIES		% of Residents New York & Ohio	Assumed Work Points
1	Continent: bowel and bladder: independent eating, dressing, and grooming [H1A0 and H1B0 and G1A g or j and h = 0]	4	0
2	Continent: assistance needed in dressing, grooming – independent eating [H1A0 and H1B0 and G1A g or j $\geq$ 1; h = 0]	10	0
3	Continent: ADL assistance needed in dressing, grooming, and eating [H1A0 and H1B0 and G1A g or j $\geq$ 1; h $\geq$ 1]	14	2
4	Continent: no assistance in dressing, grooming but some assistance in eating [H1A0 and H1B0 and G1A g or j = 0; h $\geq$ 1]	.5	2
5	Incontinent: either bowel or bladder – needs dressing, grooming assistance but not feeding assistance [H1A $\geq$ 1 or H1B $\geq$ 1 and G1A g or j $\geq$ 1 and h = 0]	12	1
6	Incontinent: either bowel or bladder: assistance needed with dressing, grooming, and some feeding [H1A $\geq$ 1 or H1B $\geq$ 1 and G1A g or j $\geq$ 1 and h $\geq$ 1]	59	3
7	Incontinent: either bowel or bladder: no assistance needed with dressing, grooming, or feeding [H1A $\geq$ 1 or H1B $\geq$ 1 and G1A g or j = 0 and h = 0]	.6	1
8	Incontinent: either bowel or bladder: no assistance needed with dressing, grooming – some assistance with feeding [H1A $\geq$ 1 or H1B $\geq$ 1 and G1A g or j = 0 and h $\geq$ 1]	.07	3

The last column of Table 3.3, *Assumed Work Points*, presents a crude four-point "work" scale that takes into account the additional staff time needed to provide feeding assistance and incontinence care. These values reflect research findings that feeding assistance requires more time than incontinence care and also increases demands on staff because it must be delivered during defined mealtime periods. In contrast, incontinence care can be scheduled and provided throughout a 24-hour period, and so does not create a "peak work demand" scenario, which would necessitate increased staffing. No work value was assigned to assistance with dressing and grooming because only a very small percentage of residents did not need this type of care in all facilities. Furthermore, because all residents require exercise to prevent physical and functional decline, investigators considered the exercise care process to be a workload constant that did not differentiate groups. Hence, investigators did not assign a workload value to exercise care.

In our analysis, the resident groups associated with the lowest workload (i.e., a workload score of 0) were those in which the residents were continent and able to feed themselves (Groups 1 and 2). Groups with the highest workload score (i.e., a workload score of 3) were those in which the residents needed both incontinence care and feeding assistance (Groups 6 and 8). Groups 5 and 7 had a workload score of 1 because residents in these groups needed incontinence care but were able to feed themselves. Groups 3 and 4 had a workload score of 2 because residents in these groups needed feeding assistance but not incontinence care.

Based on the data in Table 3.3, investigators combined resident categories with the same workload scores to get a total of four categories:

- Type A: continent, no feeding assistance (Table 3.3 categories 1 & 2);
- Type B: continent, needs feeding assistance (Table 3.3 categories 3 & 4);
- Type C: incontinent, no feeding assistance (Table 3.3 categories 5 & 7); and
- Type D: incontinent, needs feeding assistance (Table 3.3 categories 6 & 8).

The next step was to see whether the NFs in the sample were clustered in each of the four categories. If for example, most homes specialized in almost entirely continent or almost entirely incontinent residents, facilities would be clustered along the lines A+B = 100 percent and C+D =100 percent, and you could pick a few facilities from these lines, ignoring distributions of resident types that are not seen in real world nursing facilities. In each NF, if you add up the percentage of residents in each of the four categories, the total will be 100 percent. Thus, each facility lies on a three-dimensional subspace, because each facility's resident mix can be fully determined if investigators know just three of the four percentages (subtract the sum of the three percentages from 100 percent and you'll get the fourth percentage).

The correlation across NFs between percentage of type A and percentage of type C was .5, and between percentage of type B and percentage of type D was .2. All the other cross-type correlations were below -.5. In other words, this means that NFs typically have (or report) *either* a high percentage of residents who need feeding assistance *or* a low percentage of residents who need feeding assistance, independently of what fraction they have that are continent. So, the last attempt to find clusters was to inspect two-way plots of percentage in A and C versus percentage B. There was wide variation in both measures but no clusters were apparent.

Next, investigators created a set of three typical nursing facilities that together represent a range of staffing demands. Investigators multiplied the percentage of residents in each of the eight categories by the work points associated with that category, then summed the results to get the average work points for each facility. This varied from 0, if no residents needed feeding assistance or incontinence care, to 3, if all residents need both types of care. In fact, average workload had a mean of 2.23, and a standard deviation of .44 among NFs. The tenth percentile of NFs had a value of 1.61 and the 90^{th} percentile had a value of 2.72.

To create a set of three typical NFs with average work demands that ranged from low to middle to high, investigators divided the facilities into three equal-sized groups based on their average work points. Low- work NFs had average work-point values below 2.0 and high-work NFs had average values above 2.25. For each of these three groups, investigators averaged the percentage of residents in each of the eight resident categories. The results, presented in Table 3.4, describe the resident population of each of our three synthetic NFs: the low-work NF, the middle-work NF, and the high-work NF.

Table 3.4
Percent of Residents in Each Category for a Low, Middle, and High Work Facility

RESIDENT CATEGORIES		Low Work	Middle Work	High Work
1	Continent: bowel and bladder: independent eating, dressing, and grooming [H1A0 and H1B0 and G1A g or j and h = 0]	7.5	2.4	.4
2	Continent: assistance needed in dressing, grooming – independent feeding [H1A0 and H1B0 and G1A g or j ≥ 1; h = 0]	18.2	8.9	1.4
3	Continent: ADL assistance needed in dressing, grooming, and eating [H1A0 and H1B0 and G1A g or j ≥ 1; h ≥ 1]	7.0	14.9	22
4	Continent: no assistance in dressing, grooming but some assistance in eating [H1A0 and H1B0 and G1A g or j = 0; h ≥ 1]	.3	.7	.8
5	Incontinent: either bowel or bladder: needs dressing, grooming assistance but not feeding assistance [H1A ≥ 1 or H1B ≥ 1 and G1A g or j ≥ 1 and h = 0]	20.8	9.9	1.6
6	Incontinent : either bowel or bladder: assistance needed with dressing, grooming, and some feeding assistance [H1A ≥ 1 or H1B ≥ 1 and G1A g or j ≥ 1 and h ≥ 1]	40.3	57.6	67.6
7	Incontinent: either bowel or bladder: no assistance needed with dressing, grooming, or feeding assistance [H1A ≥ 1 or H1B ≥ 1 and G1A g or j = 0 and h = 0]	1.3	.5	.1
8	Incontinent: either bowel or bladder: no assistance needed with dressing, grooming – some assistance with feeding [H1A ≥ 1 or H1B ≥ 1 and G1A g or j = 0 and h ≥ 1]	.1	.2	.2
9	Bed Bound	4.5	4.9	5.9

These three synthetic nursing facilities represent approximately the 17, 50, and 83 percentiles of the work distribution. Together, they demonstrate how staffing requirements vary across nursing facilities depending on the residents' service needs. There are many NFs with similar resident mixes at about those points in the work distribution; however, the "average" NFs that investigators used in this analysis to represent the low, middle, and high workload categories have less unwanted variation in the rare categories of residents. Moreover, row 1 of Table 3.4

indicates that, as hoped for, the workload weighting procedure investigators used for incontinence care and feeding assistance discriminated between NFs with respect to the percentage of residents who were independent in dressing, grooming, and feeding; 7.5 percent, 2.4 percent, and 0.4 percent of residents in the low, middle, and high work facilities, respectively, are actually rated on the MDS as independent in all three care-process areas. This discrimination reflects the fact that the low-workload facilities not only have fewer residents in need of incontinence care or feeding assistance, but also a higher proportion of residents who are independent in dressing and grooming. Investigators next completed staffing simulations to project staffing requirements to implement care for the seven categories of residents illustrated in Table 3.4. Investigators eliminated categories 4 and 8 from Table 3.4 because of the low number of residents who need these care process combinations (investigators projected zero residents to be present on a 40-bed floor in most homes in these categories). The resident categories listed in Table 3.4 that investigators did utilize in the simulations were 1, 2, 3, 5, 6, 7, and 9. The bed-bound category (Category 9) is distinct from category six because the bed-bound residents require less time consuming range of motion exercise as opposed to 10 minutes of mobility exercise integrated with incontinence care. Both groups 6 and 9 need assistance with incontinence, feeding, and dressing/grooming.

3.7.3 Analytical Approach: Simulation Logic

The advantages and logic of the analytical approach involved in the staffing simulations were discussed previously in this chapter and in other published studies.[2-8] The output of the program for this report included shift-by-shift estimates of: 1) time spent in direct resident care and in travel, 2) estimates of the total minutes devoted to each of the recommended services, 3) the approximate time of day when time-critical services were completed on all residents and what percentage of care processes could not be completed.

For the physical layout, investigators used a 40-bed nursing unit with a T-shaped floor plan and a centrally located nursing station and dining hall. Each branch of the T was equipped with a bathroom and a shower. Investigators assumed that toilets and sinks were available in each resident's room.

Based on resident characteristics, investigators created a schedule of recommended services and the estimated times to complete them. Nurse aides were assigned to typical shifts, with two scheduled 15-minute breaks and a 30-minute meal period. The simulation of a 24-hour period involved:

- *the arrival and departure of staff, with five minutes for shift reports at the beginning and end of each 8-hour shift and breaks occurring as close to their scheduled times as possible without interrupting already in-progress service to a resident;*

- *provision of scheduled services, with aides traveling from one resident to the next to deliver care, spending the estimated times appropriate to each resident type; and*

- *random, unscheduled demands for services (representing resident call lights, spills, accidents, and similar events).*

Morning care was scheduled at 6:00 AM and breakfast at 7:00 AM. Lunch and dinner were scheduled at 12:00 am and 5:00 PM and PM care at 7:00 PM. Incontinence care and repositioning was scheduled approximately every two hours throughout the 7:00 AM to 11:00 PM period, but investigators reduced the frequency of care in the 11:00 – 7:00 shift in consideration of sleep to approximately every three hours. Care activities were integrated for efficiency whenever possible (e.g., incontinence care, repositioning, and exercise) and were scheduled during time periods when the most staff time was available. In scenarios where staffing was inadequate to provide all care, the provision of feeding assistance was prioritized and waiting times for other care activities were increased or completely omitted.

Simulations were conducted for 10 different NF staffing levels which ranged from those commonly found in the nation's NFs to the higher levels that investigators determined were needed to complete all care processes with minimal waiting times for service. Since variability in the time to provide care influences any one staffing simulation, investigators conducted multiple simulations for each staffing level so as to estimate the range of waiting times that would be caused by the variability to provide service (e.g., sometimes incontinence care can be completed in five minutes and other times it takes eight minutes). Investigators describe in this report, the most common outcome for each resident to staff ratio tested. The major outcomes upon which investigators will focus this report are:

1. *The percent of recommended minutes of care which are scheduled that are likely to be delivered.*
2. *The probable length of wait for incontinence care or assistance during a meal.*
3. *The percent of available time that staff would have to work to provide the scheduled care processes (a productivity estimate).*

In regard to this latter issue of productivity, investigators did not attempt to limit the percent of time that staff actually worked of their available time, but instead allowed the simulations to determine how much time staff would have to work to implement all care. In many cases, this resulted in unrealistically high productivity estimates as is reflected by the statistic, time involved in direct resident care divided by the total work time available. The high productivity requirements, thus, make the staffing simulations extremely conservative estimates of the actual

time needed to provide all care.

3.7.4 Simulation Input Data

Table 3.5 illustrates the input data that investigators used in the staffing simulations. The first column shows the estimated distribution of residents across the seven categories of care processes, which encompasses 100 percent of the residents in the low, middle, and high workload facilities. These numbers were reviewed previously and discussed in this chapter. The second column shows the number of residents (as opposed to percentage) who required the different care process combinations in a typical 40-bed unit. The remaining seven columns illustrate the time to provide care in minutes and the frequency that care is provided for each resident category. A complete discussion and justification for how these numbers were derived was provided either in the first report or in this chapter for those care processes for which new data were available. In all cases, the numbers were based either on published literature or time and motion data that is being collected in ongoing intervention studies. Next, investigators will briefly describe the input data illustrated in Table 3.5.

Residents who need assistance with ADL care in the morning or evening (groups 2, 3, 4, 5, & 7) were estimated to receive 11 minutes of assistance, which did not include changing, repositioning, or toileting assistance times. Residents who were ambulatory were scheduled for 20 minutes of exercise every other day, while incontinent residents received exercise integrated with incontinence care three times a day for an average of 10 minutes (column 4, rows 4 & 5). Bed-bound residents received only range of motion exercise (estimated 2 minutes per episode) 3 times per day, which was also integrated with incontinence care and repositioning. Residents who were incontinent and who were projected to be responsive to toileting assistance (approximately 40 percent of all incontinent residents) received 7 toileting assists or changes in a 24-hour period with the changes occurring at night between 11pm and 6am. These estimates were based on recent data, which suggest that residents who are responsive to daytime toileting programs are not responsive at night and will require changing.[12] The residents projected to be unresponsive to toileting assistance (approximately 60 percent) received 8 incontinence care episodes per 24-hour period, which matches their average frequency of incontinence according to one report. All incontinent residents received an additional 2 – 3 repositioning episodes per day independent of incontinence care. The frequency of either incontinence care or repositioning was reduced during the 11 pm to 7 am shift to facilitate sleep (three episodes of care between 11 pm – 7 am). Thus, all incontinent residents received a minimum of 10 episodes of either incontinence care and/or repositioning.

Table 3.5. Input Data for Current Simulation

New Patient Type	Estimated Distributions			Frequency in 40 Bed Unit			AM care excluding change or toilet (once per day per patient)	Exercise (excluding change or toilet)	Exercise frequency	Change or toilet time (includes repositioning if needed)	Change or toilet frequency (count includes AM/PM care)
	LOW WORK LOAD	MIDDLE WORK LOAD	HIGH WORK LOAD	LOW WORK LOAD	MIDDLE WORK LOAD	HIGH WORK LOAD					
1. Continent, Independently ambulatory, no need for repositioning, no need for ADL enhancements, fully independendent eating	7.5%	2.4%	0.4%	3.0	1.0	0.0	2	20	0.5	0	0
2. Continent, Independently ambulatory, no need for repositioning, ADL enhancements needed, fully independent eating	18.2%	8.9%	1.4%	7.0	3.0	1.0	11	20	0.5	0	0
3. Continent, Independently ambulatory, ADL enhancements, some feeding assistance	7.0%	14.9%	22.0%	3.0	6.0	9.0	11	20	0.5	0	0
Continent, independently ambulatory, no ADL enhancements, some feeding assistance	0.3%	0.7%	0.8%	0.0	0.0	0.0	2	20	0.5	0	0
4. Incontinent, Assisted ambulation, *day toileting/night diapers* , repositioning needed, ADL enhancements needed, fully independent eating	20.8%	9.9%	1.6%	8.0	4.0	0.0	11	10	3	7.5 day, 5.5 night	7
5. Incontinent, Assisted ambulation, *day toileting/ night diapers* , repositioning needed, ADL enhancements needed, *some or full feeding assistance*	40.3%	57.6%	67.6%	16.0	23.0	27.0	11	10	3	7.5 day, 5.5 night	8
6. Incontinent, day toileting/night diapers no ADL assistance, fully independent eating	1.3%	0.5%	0.1%	1.0	1.0	0.0	2	20	0.5	7.5 day, 5.5 night	8
Incontinent, no ADL assistance, some or full feeding assistance	0.1%	0.2%	0.2%	0.0	0.0	0.0	2	20	0.500	5.5	8
7. Incontinent, Bed bound, 24 hour diapers, repositioning needed, ADL enhancements needed, dependent eating	4.5%	4.9%	5.9%	2.0	2.0	3.0	11	2	3	5.5	8
	100.0%	100.0%	100.0%	40.0	40.0	40.0					

Table 3.5 (continued). Input Data for Current Simulation

New Patient Type	Reposition time (when done without change or toileting)	Reposition frequency	For those needing assistance: Assume 50% responsive get 1-3 intervention, 50% unresponsive get "usual care": Bedbound get same time as 1-3 intervention Tray delivery and setup (Everyone gets this each meal)	1 on 3 Feeding assistance time	Usual Care Feeding assistance time	Feeding assistance frequency	Shower time (every fourth day per patient)	PM care time (once per day per patient)	House-keeping (once per day per patient)	Unexpected events (frequency for whole unit)	Shift report (at end and beginning of each shift)	Travel at 1.5 min/trip
1. Continent, Independently ambulatory, no need for repositioning, no need for ADL enhancements, fully independendent eating	0	0	1.25	0	0	3	15	2	5	Day shift: 6 per unit, 2 minutes per event	5	Day shift: 5 trips per patient
2. Continent, Independently ambulatory, no need for repositioning, ADL enhancements needed, fully independent eating	0	0	1.25	0	0	3	15	11	5	Evening shift: 4 per unit, 2 minutes per event	5	Evening shift 3 trips per patient
3. Continent, Independently ambulatory, ADL enhancements, some feeding assistance	0	0	1.25	18	55%: 0 45%: 8	3	15	11	5	Night shift: 2 per unit, 2 minutes per event	5	Night shift: 2 trips per patient
Continent, independently ambulatory, no ADL enhancements, some feeding assistance	0	0	1.25	18	55%: 0 45%: 8	3	15	2	5			
4. Incontinent, Assisted ambulation, *day toileting/night diapers* , repositioning needed, ADL enhancements needed, fully independent eating	3.5	3	1.25	0	0	3	15	11	5			
5. Incontinent, Assisted ambulation, *day toileting/ night diapers* , repositioning needed, ADL enhancements needed, *some or full feeding assistance*	3.5	2	1.25	18	55%: 0 45%: 8	3	15	11	5			
6. Incontinent, day toileting/night diapers no ADL assistance, fully independent eating	0	0	1.25	0	0	3	15	2	5			
Incontinent, no ADL assistance, some or full feeding assistance	0	0	1.25	18	55%: 0 45%: 8	3	15	2	5			
7. Incontinent, Bed bound, 24 hour diapers, repositioning needed, ADL enhancements needed, dependent eating	3.5	2	1.25	18	55%: 0 45%: 8	3	15	11	5			

The feeding assistance input data are illustrated in column 7. Investigators estimated that 50 percent of the residents needed and would be responsive to feeding assistance, which could be delivered in groups of 3 residents at a cost of approximately 18 minutes per resident. This 18-minute estimate did not include travel time to bring each resident to the dining room. Observational data also indicated that 50 percent of the residents with low intake would not be responsive to feeding assistance and that there were two subgroups within this unresponsive group. One subgroup (55 percent) was observed to receive no assistance during meals other than tray set up. This latter group was generally rated as independent on the MDS feeding assistance item and many of this group did eat significantly less than 75 percent of the food offered. The other subgroup (45 percent) was observed to receive an average of 8 minutes of assistance per meal. These residents were generally rated on the MDS as requiring assistance at levels 2 through 4 on the feeding assistance item.

Finally, investigators projected that all residents would need bathing assistance every fourth day and that general housekeeping activities, such as chart documentation and shift reports, would consume approximately 5 minutes at the beginning and end of each shift. Randomly occurring events, such as cleaning spills or reacting to residents' requests or emergencies, were projected to occur at a rate of 6 per shift on the 7 am - 3 pm per shift, 4 per shift on the 3 pm – 11 pm, and 2 per shift on the 11 pm – 7 am. The time consumed by these events averaged 2 minutes per resident. Investigators estimated that travel times consumed approximately 1.5 minutes per trip (the lowest estimate of all the data investigators collected) and investigators furthermore estimated that there would be 5, 3, and 2 trips per resident, respectively, during the three shifts. This number of trips also assumed that staff would be highly efficient and would integrate care activities, such as exercise and incontinence care, when possible. Variability in time to provide feeding assistance and exercise was accounted for by using the minimum, mode, and maximum estimates that were documented for each care process, as was previously described in this chapter.

In general, the input data illustrated in Table 3.5 are either identical to those used in the first report or have been improved based on new data collected since that report. In all cases where data were ambiguous or incomplete, investigators estimated times in a low direction (e.g., assumed that exercise for continent residents could be effective if offered 20 minutes every other day because one study reported that low estimate). Finally, it should also be noted that the time to provide incontinence care, exercise, and feeding assistance to responsive residents also included the time required to communicate with the residents in a professional and respectful fashion. However, investigators could only assume that the other care process times that were derived from the published literature also included these communication times in their estimates.

3.8 Results

Table 3.6 provides a summary of the outcomes of different staffing levels by resident workload. Listed in the first two rows of this table, is a description of the different staffing levels for which

investigators conducted simulations in the hypothetical 40-bed unit. The first column illustrates FTEs scheduled by shifts and the second column illustrates the same information expressed as a resident to aide ratio. For example, the first row illustrates a total of 18 FTEs were present across all shifts in the highest staffed facility which resulted in a resident/aide ratio of one aide to 4.4 residents, 5.7 residents, or 20 residents on the three shifts (second column). The next column in the table illustrates the outcome of the different staffing levels. For example, consider the two staffing extremes in this table. All care could be provided on a timely basis in low, medium, and high workload facilities with 18 FTEs (first row), whereas a home with eight FTEs (last row) could implement less than 80% of the care in all facilities with long waits for incontinence and missed meals in all facilities. Feeding assistance was prioritized and residents were allowed to first go without incontinence care or exercise in the simulations in which there was inadequate staffing to provide all care. The specific services that could not be delivered might change in other simulations which prioritized services differently.

In terms of key staffing transition points, consider the changes in daytime staffing levels which resulted in either some care either not being provided or an increase in waiting times. In regard to low workload facilities, a change from 15 FTEs to 14 FTEs resulted in increased waiting times for incontinence care but had no effect on meals. Alternatively, the same change from 15 to 14 FTEs resulted in increased waiting times for both meals and incontinence care in medium workload facilities (row 3 to row 4). Unfortunately, in a high workload facility, a change from 15 FTEs to 14 FTEs resulted in increased waiting times for incontinence care and in some processes being omitted altogether.

The key staffing transition points that adversely influenced outcomes are reflected better in Figure 3.1, which shows the percentage of recommended minutes of daily care omitted as staffing levels change in each type of home. This figure makes it clear that a major transition point for a high workload facility is from 15 FTEs to 14 FTEs and in all facilities there is a significant deterioration of services when FTEs change from 13 to 12.

Finally, Figure 3.2 illustrates the proportion of available time that staff would have to work to produce the outcomes listed in Table 3.6. A time utilization ratio of 80 to 90 percent (of available time worked) is considered highly productive in other work settings and utilization rates above 90 percent are probably unrealistic in even well designed and managed NFs. This figure indicates that in only the highest staffed facilities was time utilization ratios on all shifts below the 90 percent level.

Table 3.6
Summary Table: Effects of Different Staffing Levels by Patient Workload

Shift Staffing (FTEs)		Resident-to-Aide Ratio	Low Workload	Medium Workload	High Workload
Day	9	4.4	• All care provided • Timely meals • <30 minute wait for change	• All care provided • Timely meals • <30 minute wait for change	• All care provided • Timely meals • <30 minute wait for change
Evening	7	5.7			
Night	2	20.0			
Day	8	5.0	• All care provided • Timely meals • <30 minute wait for change	• All care provided • Timely meals • <30 minute wait for change	• All care provided • Timely meals • <30 minute wait for change
Evening	6	6.7			
Night	2	20.0			
Day	7	5.7	All care provided • Timely meals • <30 minute wait for change	All care provided • Timely meals • <30 minute wait for change	>90% care provided • Timely meals • 30-60 min. wait for change when done
Evening	6	6.7			
Night	2	20.0			
Day	7	5.7	All care provided • Timely meals • 30-60 minute wait for change	All care provided • Meals >2 hrs late • 30-60 min. wait for change	>90% care provided • Meals >2 hrs late • 30-60 min. wait for change when done
Evening	5	8.0			
Night	2	20.0			
Day	7	5.7	All care provided • Timely meals • 30-60 minute wait for change	All care provided • Meals >2 hrs late • 1-2 hour wait for change	>90% care provided • Meals >2 hrs late • 1-2 hour wait for change when done
Evening	5	8.0			
Night	1	40.0			
Day	6	6.7	All care provided • Timely meals • 1-2 hour wait for change	>90% care provided • Meals >2 hrs late • 1-2 hour wait for change when done	80-90% care provided • Missed meals • 1-2 hour wait for change when done
Evening	5	8.0			
Night	1	40.0			
Day	6	6.7	>90% care provided • Meals >2 hrs late • 1-2 hour wait for change when done	80-90% care provided • Missed meals • 1-2 hour wait for change when done	80-90% care provided • Missed meals • 2-3 hour wait for change when done
Evening	4	10.0			
Night	1	40.0			
Day	5	8.0	80-90% care provided • Meals >2 hrs late • 1-2 hour wait for change when done	70-80% care provided • Missed meals • 2-3 hour wait for change when done	70-80% care provided • Missed meals • 2-3 hour wait for change when done
Evening	4	10.0			
Night	1	40.0			
Day	4	10.0	70-80% care provided • Missed meals • 2-3 hour wait for change when done	70-80% care provided • Missed meals • 2-3 hour wait for change when done	<70% care provided • Missed meals • >3 hour wait for change when done
Evening	4	10.0			
Night	1	40.0			
Day	4	10.0	70-80% care provided • Missed meals • 2-3 hour wait for change when done	<70% care provided • Missed meals • 2-3 hour wait for change when done	<70% care provided • Missed meals • >3 hour wait for change when done
Evening	3	13.3			
Night	1	40.0			

Figure 3.1. Percent of Recommended Minutes of Daily Care Omitted By Staffing and Workload

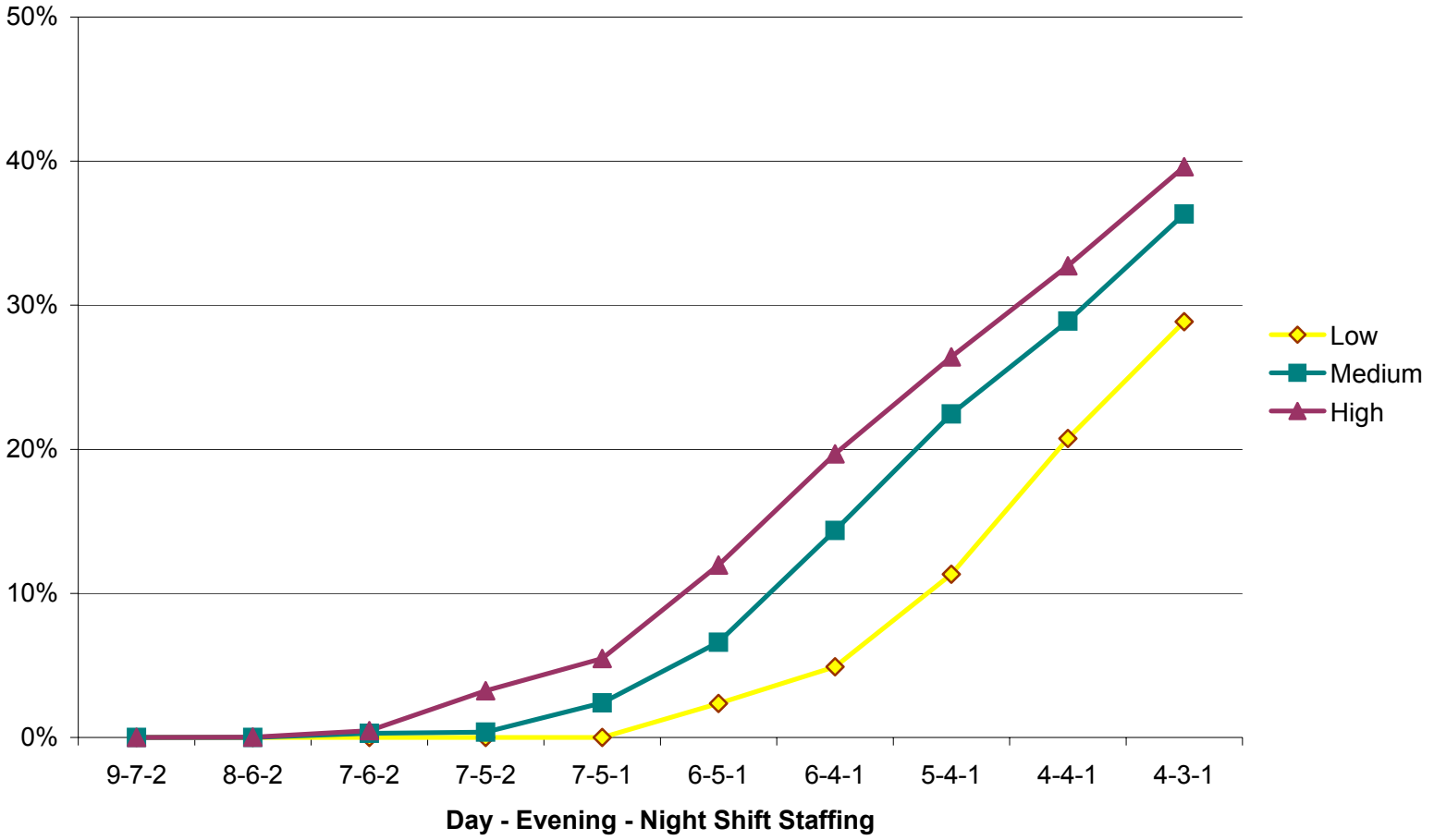
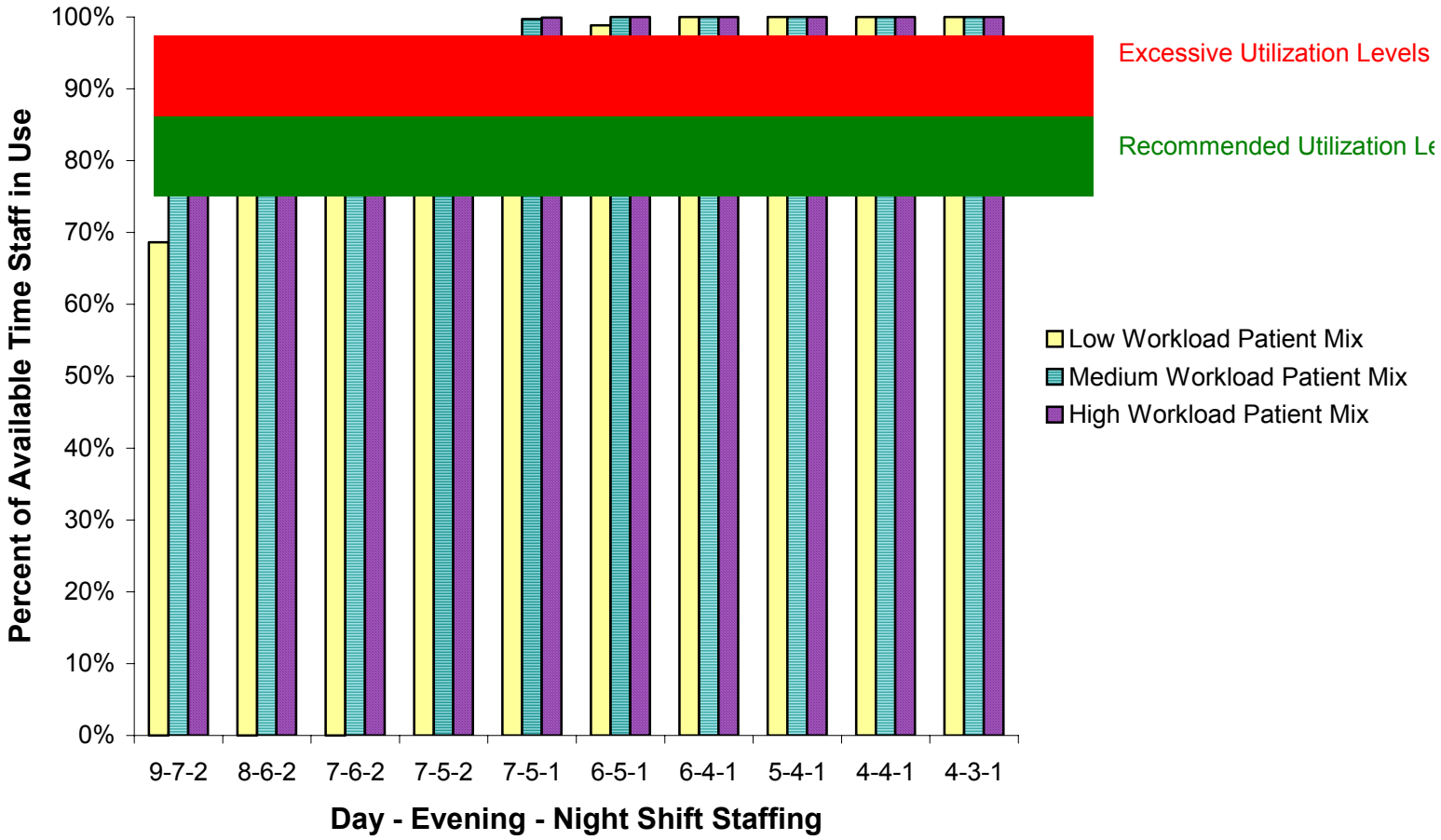


Figure 3.2. Overall Staff Utilization by Staffing and Workload



Three additional explanatory comments about the data in Figure 3.2 should be made. First, staffing changes on one shift do effect how hard staff must work on other shifts. For example, Figure 3.2 illustrates that two aides would have to work harder on the 11pm – 7am shift when staff was reduced by one on the other shifts, since all care could only be provided if the 11pm – 7am shift provided more am care and started earlier than 6 am to do so (see second and third set of bars on Figure 3.2). Secondly, investigators did not vary staffing on the 11pm – 7am shifts beyond two FTEs because the effects of changing staff on this shift were minimal. The staff on the 11pm – 7am shift have to work at unrealistically high productivity levels only when care processes could not be completed on the other shifts because of inadequate staffing. In general, care processes can be more efficiently implemented by increasing staff on shifts other than the 11pm – 7am shift. Finally, more efficient use of staff may be achieved without sacrificing the needs of residents by employing part-time staff with shifts tailored to peak workload times of day (for example, the use of one full time and one part-time aide on the 11pm – 7am shift or the use of part-time aides in the early morning). Investigators did not include the use of part-time aides in these simulations, because this is not widespread industry practice.

3.9 Conclusions: Study Results

- The minimum number of FTEs necessary to provide all care on a timely basis in a 40-bed unit varies from 16 for a high workload home to 14 for a low workload facility.

- A change in staffing from 16 to 15 FTEs in a high workload facility results in both a reduction in the number of services that can be provided and an increase in waiting times. A similar deterioration in services occurs in the low workload facility when staffing changes from 12 to 11 FTEs.

- Staffing levels that are similar to those reported in many of the nation's NFs (ratio of 8:1 day shift; 10:1 evening shift; 20:1 night shift) results in very long waits for services, and no assistance during meals for many residents, even when staff work hard.

3.10 Future Directions

This report has improved the understanding of how variations in the resident mix in NFs influence the staffing requirements necessary to provide care. However, the analysis that investigators report in this chapter suffers from many of the same problems that investigators reviewed in the first report. Most notably:

1) Investigators did not conduct simulations on all care processes that residents might need such as clinical services that could impact scheduling and delivery of nurse aide care. For example, if aides must transport residents to specialized therapy, such as PT or clinics, then preparing and transporting the resident can consume significant amounts of time. In regard to direct care processes, the most controversial processes that were

excluded may be those designed to improve quality of life or to manage behavioral and mood-disturbance problems. These processes were excluded either because of the lack of more definitive information that they change outcomes or lack of specific information about the time required to implement the processes. In addition, all the care processes that were the focus of this report did involve significantly increased social interaction between residents and nursing facility staff. To the extent that one believes that increased social interaction and personal contact improves resident's quality of life or agitation and mood, then these outcomes should also improve following implementation of the five protocols that are the focus of this report.

2) The time data and frequency of care input data that investigators utilized are based on assumptions in some cases because of the absence of definitive, published time/motion data.

3) Investigators did not simulate the staffing requirements to individualize care, but instead chose the most efficient schedule to deliver care, which was the same for all residents.

4) Investigators did not simulate the effects of varying management practices (such as use of part-time personnel or staggered shifts), which would effect staff workload and estimates of staffing requirements to implement care.

5) Related to point 4, investigators did not estimate the licensed nurse labor requirements to manage aides or to implement these care processes under the control of licensed nurses (resident assessment).

Investigators can see two possible solutions to these problems. The most immediate solution is to use the simulation model framework that investigators have constructed for this report with different input variables that might be suggested by long-term care experts or practitioners. For example, if there is concern that the exercise time and frequency input variables that investigators used are unrealistic (too high or too low) investigators could easily complete simulations with different exercise numbers. It would be helpful if a panel of stakeholders were convened to identify what care process variables or management assumptions would improve the current simulations and also be realistic to model. The second solution to this problem is more long-term. Applied research could be conducted in NFs for the purpose of determining the staffing requirements and resources necessary to implement care processes consistent with OBRA regulations and practice guidelines. This research could actively implement all desired care processes under controlled conditions while also evaluating interventions to improve efficiency. This realistic field test would most certainly help verify the arbitrary productivity assumptions that were utilized in this chapter and would also identify subtle aspects of the nurse aide job that consumes time. The Institute of Medicine made a similar recommendation in their recently released report on the quality of long-term care.[13] This recommendation is listed as follows:

"Recommendation 7.1: The committee recommends that the Department of Health and Human Services fund research to examine the actual time and staff mix required in different long-term care settings to provide adequate processes and outcomes of care consistent with the needs and variability of consumers in these settings, and the fit between these needs and other existing staffing patterns. The Committee further recommends that the Department of Health and Human Services, by establishing Centers for the Advancement of Quality in Long-Term Care, initiate research, demonstration, and training programs for long-term care providers to redesign care processes consistent with best practices and improvements in quality of life."

3.11 Conclusion: Setting Nursing Home Nurse Staffing Standards

3.11.1 Study Question: How Should Appropriateness Be Defined?

This and the preceding chapter constitutes the core empirical analyses for addressing the current concern about inadequate nursing home nurse staffing, and a long-standing requirement for a study and report to Congress on the "appropriateness" of establishing minimum nurse staffing ratios. The Congressional language was clear, but sparse and it was necessary to operationalize "appropriateness" so that there were study questions open to empirical investigation. Consistent with this objective, the analysis presented in Chapter 2 defined two key study questions: Is there some ratio of nurses to residents below which nursing home residents are at substantially increased risk of quality problems? Conversely, is there some ratio of nurses to residents above which no additional improvements in quality are observed?

As we have seen from chapter 2, this Phase 2 analysis provided further strong evidence supporting the existence of the nurse staffing ratio thresholds below which quality of care is compromised and above which there is no further significant benefit of additional staffing with respect to quality. This finding would seem to be a necessary condition for considering any minimum ratio staffing requirement. Absent this finding, arguably no minimum staffing requirement could improve quality. In contrast, if the relationship between staffing and quality is real and substantial, then a minimum requirement set at any point up to and including the identified thresholds would improve quality; higher requirements above the thresholds would not result in more improvement. Of course, the appropriateness of establishing a new regulatory minimum would also have to assess the costs, feasibility of implementation, other aspects of staffing (e.g., staff allocation, knowledge and training, supervisions, turnover/retention, and management practices), and other considerations discussed in this Phase 2 report. What is important to note here is that this conceptualization of appropriateness is what is expected from a regulatory agency; regulatory standards are typically *minimal* standards.

The "appropriateness" of minimum staffing ratios, however, could be defined as the staffing threshold required to attain good or optimal quality outcomes, as opposed to avoiding bad outcomes. Although the definition of appropriateness implicit in Chapter 2 as minimal ratios is consistent with normal regulatory standards, the alternative definition of appropriateness as optimal ratios would seem consistent - even required - by current statutes and regulations. As discussed in greater detail in Chapter 4 of our Phase 1 Report, The Omnibus Budget Reconciliation Act of 1987 (OBRA '87) provided amendments to the Social Security Act (SSA) for Skilled Nursing Facilities (SNF) and Nursing Facilities (NF). The statutory language throughout these amendments and regulations and guidelines promulgated under OBRA '87 placed emphasis upon providing the scope of care and services (including sufficient qualified staff) for a resident residing in a LTC facility to assure that each resident could attain or maintain his/her highest practicable physical, mental, and psychosocial well-being. Hence, it would appear that CMS's *current* staffing regulations, particularly the general regulation requiring ". . . sufficient nursing staff to attain or maintain the highest practicable . . . well-being of each resident . . .," are intended to provide appropriate care conceptualized as an optimal standard, not a minimal standard.5

With respect to what is appropriate nurse aide staffing, the analysis presented in this chapter is consistent with identifying a minimum ratio necessary for attaining optimal quality outcomes. Essentially, the analysis asks how much nurse aide time is required to implement five specific, daily care processes that have been linked to (good) resident outcomes: toileting assistance and repositioning residents, feeding assistance, exercise, changing wet clothes and repositioning residents, dressing/grooming independence enhancement (morning care). The simulation analysis estimates these times for seven major categories of residents with different functional limitations and care needs. The nursing aide workload varies by the distribution of residents among these categories within facilities. The distribution of nurse aide workload among all facilities can be divided into three equal groups – low, medium and high workload facilities. Separate simulations were performed for each of the three types of facilities. Obviously, these five care processes are not a complete list of what nurse aides must do, and the analysis took into consideration such things as shower assistance, p.m. care, housekeeping duties (e.g., changing bed linens), and random, unscheduled demands for services (e.g., responding to patient call lights, spills, accidents, and similar events).

The three simulations estimated that the average number of *minimal* nurse aide staff *necessary* to provide all services (i.e., the stated OBRA '87 standard) that can benefit a hypothetical 40 resident unit of low, medium, and high average workload to be 14, 15, and 16 FTEs, respectively. This is equivalent to 2.8, 3.0 and 3.2 hours per resident day, respectively. This is an estimate of the minimally necessary nurse aide staff to provide

5 With the repeal of the Boren Amendment in 1997, it would appear that Congress does not now require that the States Medicaid nursing home payment rates must be sufficient to provide " . . . services required to attain or maintain the highest practical physical, mental and psychosocial well-being of each Medicaid resident . . ." Nevertheless, the OBRA "highest practical" quality standard remains unchanged. See Phase 1 Report, Chapter 2, and Chapter 11 of this Phase 2 Report for a discussion of the Boren Amendment and State Medicaid payment rates.

optimal care. *This standard should be viewed as a necessary condition for optimal care by nurse aides, not a sufficient condition*. Obviously, the other licensed categories of nursing, RNs and LPNs are also important, as demonstrated from the findings presented in other chapters in this Phase 2 report.

The simulation estimate *assumes* a very highly motivated and productive nurse aide staff. Even under conditions of nurse aide staffing that meets or exceeds these thresholds of potentially available time, what nurse aides actually do and accomplish with respect to patient care is dependent upon a sufficiently skilled licensed staff to supervise aides as well as other organizational factors. It is important to note that the nurse aide threshold identified in chapter 2 for the long-stay population, 2.8 hrs./per resident day, is only slightly less than the median threshold of about 3.0 hrs. estimated from the simulation analysis of this chapter. This does not mean that the difference between a minimal and optimal standard is only 0.2 hrs. The evidence from chapter 2 indicates that a minimum requirement of 2.8 hrs/per resident day would yield the maximum quality attainable with the knowledge, skill, and managment practices currently found in nursing homes. The slightly higher threshold of 3.0 nurse aide hrs/ per resident day identified in the simulation analysis will not yield *under current conditions* an optimal or even more quality. But if one *assumes* very high motivation, knowledge, and productivity – conditions currently not typically found in nursing homes – then an optimal standard will be achieved.

A minimum requirement set at any threshold will entail added costs. The evidence from chapter 2 indicates that minimum requirements set higher than the identified thresholds would entail higher costs with no significant improvement in quality. Hence, added resources beyond that necessary to staff at the thresholds identified in chapter 2, would yield quality improvement if directed at other aspects of staffing than sheer numbers of staff. These include all the factors that make for the very high motivation, knowledge, and productivity assumed in the simulation model and discussed in various analyses in this report (see chapters 5, 6, and 7). Similarly, any minimum requirement will entail consideration not only of the added costs, but whether the additional resources could yield more quality improvement if directed at these other non-numerical staffing-related factors.

3.11.2 Applying the OBRA '87 Standard

As noted in this chapter, the simulations' estimate of minimally necessary nurse aide time is much higher than typically found in U.S. nursing homes. But how much higher? In Tables 3.7 – 3.11 below, we have estimated the number of homes that fail to meet the minimum thresholds associated with the nurse aide workload category assigned to each home. These estimates require generating from MDS data a workload category for each home, and linking that category with the actual nurse aide staffing, derived from OSCAR data. Depending on the distribution of residents between workload categories *within* each home, each nursing

home is assigned an average nurse aide workload score.6 Each home is then rank ordered and one-third assigned to each of the three categories. As can be seen in Figure 3.3, the distribution of nursing homes is approximately normal with a median value of 1.76.

We have utilized a modified OSCAR data set to generate the estimate of the number of homes that fail to meet the staffing thresholds associated with the low, medium, or high workload categories.7 As was discussed in greater detail in Chapter 7 of the Phase 1 Report, this OSCAR file has been created with decision rules that improve the accuracy and reliability of the reported data.

As we can see from Table 3.7, the vast majority of nursing homes in the U.S., over 91 percent, fall below the threshold associated with their nurse aide workload category. Over 40% of *all* nursing homes would need to increase nurses aide staffing by 50% or more to reach the minimum threshold associated with their workload category, and over 10% would need to increase their nurse aide hours in excess of 100 per cent.

- Only 6% of freestanding facilities exceeded their associated minimum thresholds. Although the impact was less for hospital-based facilities, only 25% exceeded the thresholds.

- Reflecting the lower staffing levels of for-profit facilities, minimum nurse aide staffing requirements associated with these thresholds would affect more facilities than non-profit or government facilities. Ninety-five percent of for-profit facilities fell below their associated thresholds, compared to 85% of non-profits and 79% of government facilities.

- The percentage of facilities failing to meet the thresholds associated with their workload group varied somewhat: for the high workload group (3.2 hrs/resident day threshold), 93.5 % fell below threshold; for the medium workload group (3.0 hrs/resident day threshold), 93.4% fell below threshold; for the low workload group (2.8 hrs/resident day threshold, 87.4% fell below threshold (Tables 3.7-3.10).

3.11.3 Is the OBRA Optimal Staffing Standard Attainable?

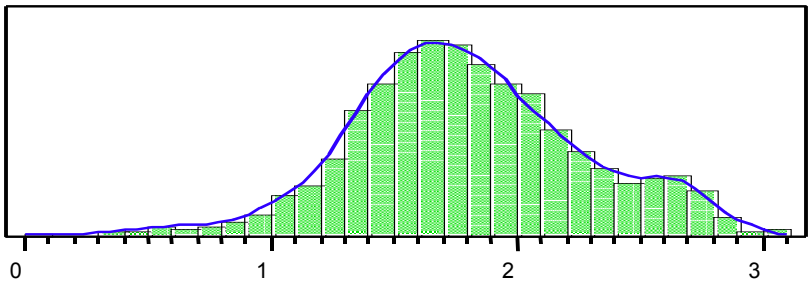
The findings produced here raise serious doubts whether this minimal optimal standard is a

6 Depending on a configuration of MDS elements, each resident receives an associated number of workload points which vary between zero and three (see Table 3.3). These points are summed over all residents and divided by the total number of residents to obtain an average workload score for the nursing home.

7 The staffing data were derived from the most current surveys conducted between October 1999 and March 2001. The decision rules entailed some deleted observations resulting in nurse aide staffing data for 16,224 nursing homes. These homes were linked to MDS assessment from which we derived the workload estimates. MDS assessments were selected from the quarter nearest the survey date. For some homes the identification number did not provide a link. The tables in this chapter are based on the final linked dataset of 14,060 nursing homes.

realistic goal. Clearly, a very large percentage of facilities fail to meet this standard and a significant percentage fails by a very wide margin. This failure is compounded when one takes into consideration that these thresholds are lower bound estimates for providing all needed care. As was shown in this chapter, the simulations assume very little unscheduled care demands, and what might be considered unrealistic high levels of on-task work performance and productivity for a health care worker. It also assumes a convenient physical layout, and a deployment of staff in what was recognized as an unrealistically efficient manner. More realistic assumptions would clearly raise the thresholds and the estimated number of facilities that fail to meet them. And, as note above, even if nurse aide staffing levels were to be raised to these very high levels, the evidence from chapter 2 indicates that quality would not be improved unless there was also improvement in motivation, skill, and productivity of nursing staff.

Figure 3.3
Nurse Aide Workload Distribution, U.S., 2000



Average Nurse Aide Workload Score

Source: MDS, OSCAR

Table 3.7
Staffing Levels in U.S. Nursing Homes: Impact of Optimal Nurses Aide Staffing Requirement, All Homes, 2000

	PROPORTION < MINIMUM	Proportion needing to increase by:						
		1-10%	11-20%	21-30%	31-40%	41-50%	51-99%	>=100%
ALL-ALL	0.914	0.055	0.086	0.108	0.127	0.124	0.309	0.104
Freestanding	0.937	0.050	0.083	0.109	0.132	0.131	0.328	0.104
Hospital-Based	0.746	0.086	0.109	0.102	0.096	0.073	0.173	0.107
For-profit	0.948	0.038	0.067	0.097	0.130	0.132	0.365	0.118
Non-profit	0.864	0.084	0.124	0.130	0.124	0.110	0.212	0.081
Government	0.792	0.092	0.112	0.130	0.122	0.108	0.168	0.059

Note: The minimum nurses aide staffing level suggested by the simulation analysis is 2.8, 3.0, and 3.2 hrs./resident day for low, medium, and high workload homes,
respectively.

Source: OSCAR

Table 3.8
Staffing Levels in U.S. Nursing Homes: Impact of Optimal Nurses Aide Staffing Requirement, Low Workload Homes, 2000

	PROPORTION < MINIMUM	Proportion needing to increase by:						
		1-10%	11-20%	21-30%	31-40%	41-50%	51-99%	>=100%
ALL-LOW	0.874	0.066	0.101	0.119	0.132	0.117	0.239	0.099
Freestanding	0.920	0.061	0.099	0.125	0.145	0.129	0.265	0.097
Hospital-Based	0.704	0.087	0.111	0.099	0.087	0.072	0.144	0.106
For-profit	0.928	0.045	0.082	0.113	0.152	0.133	0.291	0.112
Non-profit	0.807	0.098	0.134	0.129	0.102	0.095	0.167	0.083
Government	0.703	0.102	0.120	0.127	0.099	0.085	0.113	0.057

Note: The minimum nurses aide staffing level suggested by the simulation analysis for low workload nursing homes is 2.8 hrs./resident day.

Source: OSCAR

Table 3.9
Staffing Levels in U.S. Nursing Homes: Impact of Optimal Nurses Aide Staffing Requirement, Medium Workload Homes, 2000

	PROPORTION < MINIMUM	Proportion needing to increase by:						
		1-10%	11-20%	21-30%	31-40%	41-50%	51-99%	>=100%
ALL-MED	0.934	0.053	0.089	0.114	0.137	0.133	0.322	0.086
Freestanding	0.945	0.050	0.087	0.113	0.140	0.138	0.333	0.084
Hospital-Based	0.803	0.097	0.105	0.120	0.103	0.083	0.188	0.108
For-profit	0.958	0.035	0.070	0.102	0.139	0.141	0.376	0.096
Non-profit	0.894	0.092	0.135	0.135	0.135	0.116	0.210	0.071
Government	0.845	0.092	0.102	0.155	0.125	0.122	0.201	0.046

Note: The minimum nurses aide staffing level suggested by the simulation analysis for medium workload nursing homes is 3.0 hrs./resident day.

Source: OSCAR

Table 3.10
Staffing Levels in U.S. Nursing Homes: Impact of Optimal Nurses Aide Staffing Requirement, High Workload Homes, 2000

	PROPORTION < MINIMUM	Proportion needing to increase by:						
		1-10%	11-20%	21-30%	31-40%	41-50%	51-99%	>=100%
ALL-HIGH	0.935	0.045	0.069	0.092	0.113	0.122	0.367	0.127
Freestanding	0.944	0.043	0.066	0.092	0.113	0.126	0.376	0.128
Hospital-Based	0.811	0.074	0.105	0.093	0.118	0.062	0.248	0.111
For-profit	0.957	0.036	0.051	0.078	0.100	0.123	0.422	0.146
Non-profit	0.905	0.060	0.102	0.125	0.139	0.121	0.269	0.089
Government	0.824	0.081	0.114	0.106	0.143	0.117	0.187	0.077

Note: The minimum nurses aide staffing level suggested by the simulation analysis for high workload nursing homes is 3.2 hrs./resident day.

Source: OSCAR

References

1. Health Care Financing Association. Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes. Summer 2000.

2. Edmonds MI, et al. The use of computer simulation as a strategic decision-making tool: a case study of an emergency department application. *Healthcare Management Forum*. 1999;Fall,12(3):32-8.

3. Dexter F, et al. Statistical method to evaluate management strategies to decrease variability in operating room utilization: application of linear statistical modeling and Monte Carlo simulation to operating room management. *Anesthesiology* 1999; Jul;91(1):262-74.

4. Tucker JB, et al. Using queuing theory to determine operating room staffing needs. *Journal of Trauma* 1999; Jan;46(1):71-9.

5. Fries BE and Maranthe VP. Determination of optial variable sized multiple-block appointment systems. *Operations Research* 1981; 29: 324-328.

6. Myers JE, Johnson RE and Egan DM. A computer simulation of outpatient pharmacy operations. *Inquiry* 1972; 9: 40-47.

7. Hershey JC, Pierskalla W and Wandel S. Nurse staffing management. In *Operational research applied to health services* (D. Boldy, ed.) 1981 New York: St. Martin's Press.

8. Bagust A, et al. Dynamics of bed use in accommodating emergency admissions: stochastic simulation model. *British Medical Journal* 1999; 17; 319(7203): 155-8.

9. Schnelle JF, Cretin S, Saliba D, Simmons SF. Minimum Nurse Aide Staffing Required to Implement Best Practice Care in Nursing Homes. Chapter in Report to Congress: Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes. Health Care Financing Administration. Summer 2000, Volume II, Chapter 14.

10. Schnelle JF, Alessi CA, Simmons SF, Al-Samarrai NR, Beck JC, Ouslander JG. Translating Clinical Research into Practice: A Randomized Controlled Trial of Exercise and Incontinence Care in Nursing Home Residents. (In Preparation)

11. *Analysis for Public Decisions*, 3rd edition ES Quade, revised by Grace M Carter, North Holland, 1989.

12. Ouslander JF, Al-Samarrai N, Schnelle JF. Prompted Voiding for Nighttime Incontinence in Nursing Homes: Is it Effective? J Am Geriatr Soc. 2001;49:(6):706-709.

13. Committee on Improving the Quality in Long-Term Care, Division of Health Care Services, Institute of Medicine. Improving the Quality of Long-Term Care. Gooloo S. Wunderlich and Peter O. Kohler, Eds. National Academy Press. Washington, D.C. 2001 National Academy of Sciences.

4.0 Nursing Staff Turnover and Retention in Nursing Homes8

1.1. 4.1 Introduction

The "appropriateness" of establishing minimum nurse staffing ratios, the central policy issue of this Congressionally-mandated report, cannot be inferred solely from empirical studies demonstrating a strong relationship between critical staffing ratio thresholds and resident outcomes. Of course, if no such relationship is found or if the evidence is ambiguous, then the policy issue becomes moot. As we have seen in Chapter 2 and Chapter 3, the evidence supporting the existence of these critical thresholds is strong and compelling. But, as we have also noted, there are other issues relevant to a consideration of "appropriateness." Among these issues there is, first, the question of whether these staffing thresholds can or should be adjusted for case mix. Second, there is the question of whether the existing nurse staffing data are sufficiently accurate for determining compliance with any nurse staffing requirement that might be implemented (see Chapter 9). Third, there is the issue of the cost of higher staffing levels and how the current public payment systems, Medicare and Medicaid, need to be modified to support improved staffing (see Chapter 11). All these issues are examined extensively in the above cited chapters.

Perhaps the strongest argument against establishing minimum staffing ratio requirements is that there is currently such a sufficiently severe shortage of nursing personnel – RNs, LPNs, Aides – that a mandated requirement could never be implemented, whatever the merits of higher staffing levels.9 In general, studies point to the increased demand for long term care nursing created by the aging of the population and the constrained supply of nursing personnel to meet the demand. A number of specific factors differentially impact the licensed, particularly the RNs, workforce. The demand for RNs is likely to greatly increase over the next three decades when current baby boomers reach retirement. During the same period, the projected supply of RNs is expected to fall 20% below predicted requirements (Buerhaus, et al, 2000). The average age of the current RN workforce has continued to rise, and enrollment of basic nursing programs has steadily fallen, due in part to the increased

8 This chapter and the next, while important to this Phase 2 Report to Congress on the appropriateness of minimum staffing ratio requirements, fulfills a separate Congressional requirement of a report on staff retention in long term care facilities. The research strategy for this project was developed by Marvin Feuerberg, CMS, who also wrote sections 4.1, 4.2, and 4.8. Alan White, Abt Associates, wrote sections 4.3 – 4.7. Susan Eaton, Harvard University, wrote the next chapter in its entirety.

9 Although the discussion of the nursing workforce in this introductory section is generic, encompassing nursing in both acute and long-term care settings, it is recognized that the factors affecting demand and supply of nursing will differentially impact specific care settings. The subsequent sections discussing turnover and retention will be limited to that currently found in nursing homes, particularly nursing assistants. It also is limited to what is usually viewed as the direct care staff, and does not address the impact of widely acknowledged problems in turnover and retention of nursing home Administrators and Directors of Nursing.

expansion of career opportunities for women outside of nursing. If these trends continue, the RN workforce will begin to decline as the aging RNs retire.

Unlike the licensed nursing staff who must complete educational and special training programs that range from 12- to 18 months preparation for LPNs or 2 - 4 years for RNs, the paraprofessional long-term care workers are not required to complete any program to become a nursing assistant (NA).10 As noted by Callahan (2001), most of the paraprofessional workforce, including NAs, ". . . work in what economists call a 'secondary' labor market. It is one characterized by 'low wages and fringe benefits, poor working conditions, high labor turnover, little chance of advancement, and often arbitrary and capricious supervision.' Current data recently assembled by the GAO (2001), indicates that compared to the workforce in general, ". . . nurse aides are more likely to be female, non-white, unmarried, . . with children at home. . . uninsured, living below the poverty level, and receiving public benefits such as food stamps and Medicaid."

One important consequence of NAs being drawn from this secondary labor market with few educational/training prerequisites for entry is that the factors affecting the supply of workers are different in many respects from that impacting the shortage of licensed nursing. Specically, NAs and other long term care givers are impacted by welfare policies, and prevailing wages and employment conditions in other competing low-wage service sectors (Banaszak-Holl and Hines, 1996; Pennsylvania Intra-Governmental Council on Long Term Care, 2001). Further evidence on the general prevalence of the problem is found in a recent state survey. Forty-two of 48 responding states (88 percent) indicated that turnover and retention were an issue in their state and two-thirds had taken some action to address the nurse aide issue.11 In general, the current shortage of NAs during the last few years has been has been due to a robust economy and historically low unemployment.

The nursing workforce shortage problem and related issues are examined more extensively in Chapter 8 and in several published research studies noted above. (See also, AHCA, 2001; IOM, 1996; IOM, 2001).

1.1.1. 4.1.1 Relationship between Nursing Workforce Shortage, Turnover/Retention Problems, and Quality of Care

In addition to the evidence of a future projected shortage of nursing personnel, described above, widespread reports by nursing homes and the industry of difficulties in filling vacancies as well as very high turnover rates provide evidence of a currently acute shortage.

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10 However, once on the job, nursing assistants must complete a very limited training program and pass a competency examination to become "certified nursing assistants" (CNAs). These training programs are discussed at length in Chapter 7.

11 See Appendix B, "Results of a Follow-Up Survey to States on Wage Supplements for Medicaid and Other Public Funding To Address Recruitment and Retention in Long-Term Care Settings," (North Carolina Division of Facility Services, November 4, 2000.

For example, a recent survey of Pennsylvania's long term care facility and agency administrators found that across the state, 13 percent of providers reported vacancy rates of paraprofessional direct care workers exceeding 20 percent; 19 percent of privately operated nursing homes reported vacancy rates greater than 20 percent (Pennsylvania Intra-Governmental Council on Long Term Care, 2001). This general pattern of shortage is more pronounced for nursing homes that have lower wage rates for RNs, LPNs, and NAs than hospitals (AHCA, 2001). It is generally presumed that the current shortage creating a demand for nursing personnel in turn increases the difficulty of nursing homes in retaining staff which, in turn, increases turnover.

Nursing home quality is also negatively impacted by these labor force dynamics. To the degree that staffing levels are lower than they would be in the absence of a shortage, then resident care is adversely impacted, particularly if staffing fall below critical thresholds (see chapter 2 and chapter 3). Even holding staffing levels constant, it has been argued that high turnover/low retention of nursing staff negatively impacts resident quality. Although there is an absence of studies documenting this relationship, there does appear to be a reasonable rationale for thinking that turnover may impact resident quality. Advocates maintain that high turnover reduces the daily flow of information and familiarity with the resident and the continuity of care. This rationale would particularly apply to NAs who provide the vast majority of hands-on care. And turnover rates of all nursing personnel appear to be extremely high, as will be discussed below.

4.1.2 Purpose

This chapter on nursing turnover and retention together with other chapters in this report on management practices and training highlight staffing dimensions other than sheer numbers or ratios of staff that importantly impact nursing home quality of care. Specifically, this chapter will: (1) review selected published research on what is known about nursing staff turnover and retention; (2) present a quantitative analysis of newly available data on the factors contributing to turnover; and (3) review the policy responses to the problems presented by the currently high rate of nursing turnover.

4.2 Review of Selected Research on Nursing Staff Turnover and Retention in Nursing Homes

4.2.1 How Much Turnover and Retention is There?

This seems like a simple question, but it is very difficult to give a precise answer. First, there is a definitional issue of how turnover and retention are defined. Although the precise operational definitions differ somewhat from survey to survey, conceptually they are quite distinct. Most broadly, turnover rates for a given category of workers are "usually expressed as a percentage and are computed by dividing all of an organization's new hires in a given time period (usually one year) by their average number of positions during that time period (Atchley, 1996)." Different survey instruments may make a further distinction between part-time and full-time employees by calculating separate rates. Still others make a distinction in

the denominator between the average number of filled positions and a total number of positions including vacancies. In addition, most of the concern with turnover has been with voluntary terminations rather than involuntary. Turnover that results from the termination of employees who are fired because of poor performance (e.g., abuse of residents) would normally be viewed as positive. Unfortunately, the usual data sources do not make the distinction between voluntary and involuntary terminations.

In contrast, retention rates, sometime referred to as stability or continuity rates, are usually expressed as a percentage and calculated by dividing the number of employees who have been employed by the organization for some period of time (usually one year) divided by the number of employees at the beginning. Other less frequently generated measures of stability could also be generated. For example, an average length of stay could be computed by dividing the total years of service of all employees by the total numbers of employees. Although there can be distinctions in the precise definitions of turnover and retention (stability), it is important to note that once defined, the two rates are conceptually very different and capture very different labor force dynamics. Although it might be expected that high turnover rates would be accompanied by low retention rates, this is not necessarily true. For example, it is possible for an organization to have a relatively high turnover rate represented by a high turnover of a portion of their staff while a large portion of their staff remains over the period in question (again, usually one year).

A more serious obstacle to determining the degree of turnover and retention is not definitional, but rather the absence of national reporting. Unlike the continuous census of nurse staffing in certified nursing homes provided by CMS' (formerly HCFA) OSCAR system or the relatively infrequent national representative sample surveys,12 there is no current census or nationally representative sample survey of turnover and retention among nursing homes. The typical data sources for estimating turnover and retention are individual, small-scale studies, usually limited to some subset of responding facilities within a single state, often predating the recent concern with turnover and retention. Recently, however, a few states have collected data on turnover and retention in special surveys and/or their Medicaid cost reports. These data provide an opportunity for a facility-level analysis of all or nearly all facilities in the states. Accordingly, we were able to obtain newly available data on nursing staff turnover and retention for three states and conduct an analysis which is presented in Section 4.3 - 4.7 below.

Apart from the absence of national reporting, the most serious problem in determining the degree of turnover and retention is the accuracy of the data that are reported. There are several reasons to doubt the accuracy of these data. First, in many of the small-scale studies, sampled respondents are asked to report their turnover rate. In one study the correlation between the organizations' computed turnover rate for nurse aides and the investigators computed rate (from data elements also reported by the facility) was only a very low .33 (Straker and Atchley, 1999). In another study, the correlation between turnover

12 See Phase 1 Report, Chapter 3.

of nurse aides reported by Administrators and Directors of Nursing (DON) was higher (.79), but it is difficult to know if these estimates from the respondents are truly independent. [Also, estimates were for a six-month period, which might produce more accurate results than the recall period of the more commonly used time period of one year.]. More direct evidence of accuracy problems is illustrated by inconsistencies in the data examined in Section 4.3 - 4.7 below.

Finally, as examined at length in Chapter 9, it may be difficult for nursing homes to report accurately their staffing levels and other staffing characteristics, including turnover and retention, because their normal record keeping is not set up for this task. The data elements are there, but often in several different places/records, and the facility respondent may not be the most knowledgeable person in the use of these records.

4.2.2 Summary – How Much Turnover and Retention is There?

Due to the absence of nationally representative reporting and the doubts about the accuracy of the data that are reported, precise estimates of turnover and retention are not available. In addition, few studies reporting turnover are accompanied by retention estimates. This current situation may improve if more states require reporting of these data in annual surveys, Medicaid cost reports, or if these data are required in new Federal reporting requirements, either as additional reporting or a replacement for the staffing section of the current OSCAR system. To the degree that facilities are periodically required to report these data, it is reasonable to presume that they will become familiar with the definitions, and develop record keeping to facilitate more accurate reporting.

Although precise national estimates are not possible, some very important things are known. First, all studies produce estimates of turnover that are relatively high. In a number of studies examined by AHCA (2000), the average turnover rate of nurse aides in nursing homes ranged between 38 percent and 143 percent; average turnover rates for LPNs ranged between 27 and 61 percent; and the average turnover rate for RNs ranged between 28 and 59 percent. Second, although the average turnover rates are high, there appears to be considerable variation among reporting facilities not only within a state, but among nursing homes within the same labor markets. Further evidence is provided below in Section 4.3 - 4.7.

4.2.3 What are the Factors Contributing to Turnover?

Typically, the purpose of the data collection on turnover is to investigate the factors that impact or are impacted by turnover; that is, with a few exceptions, the primary purpose of these studies is not solely to estimate turnover and retention. However, given the above description of the limitations of the typical data collection on turnover, it is not surprising that the studies in turn are also limited. Up until recently, staffing, including staffing levels and turnover, has not been a central concern of policy makers and health service researchers. Consequently, the currently available research is also limited,13 particularly qualitative

13 The problems in securing adequate data on staffing levels in nursing homes are discussed in Chapters 3, 7, and 8 of the Phase 1 Report (HCFA, 2000); Inadequate nurse staffing data has also posed a serious problem

studies that require reasonable samples. We think the analysis of newly available data presented in the next section is an improvement on this situation. However, given the general inadequacy of data for quantitative analysis, sound qualitative studies may provide more information on turnover processes, even if generalizations are limited. One such study is presented in chapter 5 below.

Although there are many alternative ways of conceptualizing the types of factors affecting turnover, particularly voluntary turnover, they can be generally divided into internal and external factors. The internal factors are those characteristics of the job that may motivate an individual to leave (push factors, e.g., low pay/benefits, stressful work, lack of promotion opportunity) in contrast to the external factors (pull factors) that are external to the job (e.g., opportunity for better job, family responsibilities). Of course, the salience of any particular factor for an individual will also be dependent on characteristics of the individual, including age, gender, education, training, work and other experience, family background, personal goals, etc. No one study can examine all these factors/variables, and the dependent variable, turnover, is subject to considerable measurement error.

For RNs working in nursing homes, the GAO (2001) noted that ". . . recent surveys of nurses have found decreased job satisfaction, and a high portion of respondents have reported increased pressure to accomplish work, the need to work overtime, and stress-related illness . . . job dissatisfaction is a primary reason for nurse retention problems. To these "push" factors in the retention equation must be added the general shortage due to the increased demand by an aging population and the shrinking supply of RNs, as noted above. Also, licensed staff working in nursing homes on average improve their wage rates by moving to a hospital setting (AHCA, 2001). The importance of other factors such as wages and benefit levels, facility staffing levels, facility characteristics, and local labor market conditions are discussed in Section 4.6 below.

4.2.4 Nursing Assistant Turnover

The "bed and body" work of nursing assistants is hard, stressful, highly injurious, often unpleasant work for relatively low pay, benefits, or recognition (Diamond, 1992). Although the work is often characterized as unskilled, it requires a high level of personal organizational skills to complete all (or even a substantial portion) of required tasks under the typical conditions of short staffing and absenteeism (Bowers and Becker, 1992). Hence, it is not surprising that there is extremely high turnover of nursing home NAs due to the "pull" of other opportunities, particularly with a robust economy and the low unemployment levels during the past 8 years. Put bluntly: "Ironically, while these [frontline] workers are delivering essential care to some of the most vulnerable segments of our population, their peers 'flipping burgers at McDonalds' make more, have much more financial security, and are treated with much more respect" (Stone, 2001).

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in a recent comprehensive study of nurse staffing and patient outcomes in hospitals (Needleman, et al, 2001).

Some indication of where these workers go is found in an on-going longitudinal study of all those individuals who were certified as having completed, at any time after 1990, the training for Nursing Assistant 1 (an entry level classification). The study found that "less than half of the 180,000 North Carolinians trained to work as nursing assistants during the last decade are currently certified to work as a nurse aide. Even among those who are certified, many apparently work only part-time as a nurse aide and supplement this income with earning from other unrelated jobs in low wage industries," including retail sales, eating and drinking establishments, manufacturing, and transportation (Konrad, no date).14 Evidence of the importance of these external local labor market factors has been discussed above and further evidence is provided in Section 4.6 below.

A recent review (Bowers, et al, 2001) of CNA turnover studies identified a number of organizational characteristics, external to the individual, as contributing to turnover: " . . . highly centralized, authoritarian management style which leave little room for CNAs to make care suggestions; . . .restricted chances for advancement . . . inadequate training or orientation, inadequate resources to provide care (including chronic understaffing); . . . lack of opportunity to contribute to care planning, and lack of acknowledgement or reward for good work." Unfortunately, the studies do not yield a consistent explanation of turnover. For example, the often cited study by Banaszak-Holl and Hines (1996) found that the intensity of work demands did not have the expected effect on the rate of nurse aide turnover. Similarly, increased aide training did not lead to decreases in turnover. Nor did a primary resident assignment have a significant effect. Banaszak-Holl and Hines suggest that if training is linked to changes in job structure to increase work autonomy and better career opportunities, it might lead to lower turnover. Similarly, they suggest that if a primary resident assignment were accompanied by greater autonomy in dealing with the resident, then turnover by be thereby reduced.

Taken as a whole, the central problem with the usual studies is that it is difficult to arrive at a consistent and compelling explanation or even a more satisfying understanding of turnover. An alternative approach is found in the recent study by Bower et al (2001). Utilizing a methodology that permits the CNAs themselves to explain not only what factors are important in their decisions to leave their jobs, but how these factors influence their decisions. Unlike other studies that often use very structured questions with a pre-selected set of factors which often constrain the responses, the investigators began by simply asking the CNAs to talk about their work. Subsequent interviews not only focused on the usual

14 This on-going study linked North Carolina's Nurse Aide Registry with wage and occupational information contained in the North Carolina Common Follow-up System maintained by the Department of Labor. Of course, there are limits as to what can be inferred from the quantitative analysis of movement in and out of certification. Explanations of turnover of those CNAs who have allowed their CNA registration to lapse as well as those who have maintained their certification will be strengthened when the investigators have completed planned interviews with a sample of CNAs themselves. This added information should provide some suggestions for effective intervention strategies.

factors in these studies (e.g., staffing policies, pay, training, etc...) but what these policies and practices represented to the CNAs:

". . . that CNAs were not appreciated or valued by the organization. It was CNAs' interpretation of this underlying message, and the gulf they saw between organizational rhetoric and organizational policy, rather than the policies themselves, that CNAs identified as the reasons they left their jobs."

Although the CNAs responses were complex and too highly nuanced to present fully here, the management rotation of staff and compensation policy provides a few illustrative examples. From the perspective of management, rotating staff is one way to deal with inadequate staffing by pulling staff from fully staffed units to make up for shortages in other units. From the perspective of the CNAs, managers taking "an aide away from her usual residents, . . . were discounting how much her skill, experience, and especially, her knowledge of these residents contributed to the quality of their care." Similarly, from the management's perspective, an across the board pay raise for all aides is viewed as narrowing the gap between the low pay and a living wage, thereby improving their ability to recruit and retain workers. From the CNAs perspective:

"When facilities had no, or only minimal, differences in wages for new workers and more experienced workers, or skillful workers and less skilled workers, or those who were doing the work with great commitment and those who were just showing up, CNAs viewed the compensation policy as unfair and indiscriminant, citing it as one more examples of dismissing. A similar message was sent when regular CNAs learned that pool staff, whom they perceived as lacking both commitment and the skill born of familiarity with residents, were paid a higher hourly rate than regular staff."

The central message that emerges from this study, in contrast to the accumulation of (often inconsistent) factors in the typical turnover studies described above, is that CNAs do not respond passively to factors, but actively interpret their meaning in terms of the respect accorded to them both personally and professionally. This has important implications for what kinds of intervention strategies for reducing turnover are likely to be ineffective, as will be discussed below. At the very least, it cannot be assumed that state policies initiatives to reduce turnover, e.g., Medicaid wage-pass-throughs or encouragement of nurse aide career ladders, will automatically have the intended effect.

4.2.5 The Impact of Turnover on Nursing Home Quality

It is usually assumed that high turnover negatively impacts the care received by nursing home residents. Yet, as might be inferred from the above discussion of the lack of good data sources of turnover, the supporting evidence is weak. Indeed, the majority of turnover studies have been on the factors contributing to turnover; the impact of turnover on quality is assumed. There are two studies cited by the Institute of Medicine (1996) as indicating that High RN and LPN turnover is associated with lower quality of care. These two studies were published 10-11 years ago, based on data collected 16 years ago (two other cited studies were even more dated). One study (Spector and Takada, 1991), limited to nursing homes in a small state, Rhode Island, found that lower RN turnover positively impacted functional improvement. RN turnover did not significantly impact the two other outcome measures (death and functional decline) and LPN and Aide turnover did not impact any of the outcome measures. Further, only 56 of the 80 homes responded to the turnover study. The other IOM cited study (Monroe, 1990) of California facilities in 1986 found that the turnover *of all facility personnel* had a positive impact ($p < .10$) on the outcome quality measure, the number of health related deficiencies. Given that the impact does not even reach the conventional .05 significance level (although the N = 455), that the regression model only explained 8.6 percent of the variance, that nursing turnover was not separately measured, and that the quality outcome measure, deficiencies, is subject to the widely acknowledged inconsistent surveyor behavior,15 it is hard to find this and the other cited study as providing support for the "turnover impacts quality" hypothesis.

But the absence of direct evidence does not mean that turnover does not impact care and resident outcomes. Given the difficulty in obtaining accurate measures of turnover and the relatively recent interest in turnover, it is not surprising that studies producing compelling evidence on the impact of turnover on quality have not as yet been conducted. Nevertheless, there is a compelling rationale for believing that high turnover negatively impacts quality, a rationale supported by indirect evidence. Researchers have argued that "no one else in the facility approaches their personal knowledge of the residents that the aides have. By virtue of the intimacy of their 'bed and body' work, the aides can observe subtle changes in residents' psychological and physiological conditions before they become clinically significant (Brannon and Smyer, 1994)." The IOM (1996) maintains that " . . . high turnover compromises the continuity of care and supervision of staff . . . high turnover rates adversely affect residents who do not cope well with frequent changes in staff." Others have argued that "at the minimum, turnover affects continuity of care and care recipient relationships . . . staff turnover can often result in staff shortages that require the remaining staff to do too much work in too little time. Turnover breeds more turnover as remaining staff lose morale, feel overworked and undervalued, or even become injured from lifting residents without a helper . . ." (Straker and Atchley, 1999). Turnover also requires orientation of new

15 See Phase 1 Report, chapter 6, for a more detailed discussion of outcome measures and risk adjustment in nurse staffing studies.

employees, time for new workers to get "up to speed," and time from existing staff to train new employees (Konrad, 2001).

Absenteeism is a frequently mentioned problem by nurse aides.16 If one assumes that absenteeism leads to staff shortages (at least in the short run) which leads to higher and more stressful work for remaining staff which in turn leads to turnover and further staff shortages, then there is indirect evidence that this reciprocal process could negatively impact quality. First, there is the compelling evidence presented in Chapter 2 that when staffing ratios fall below certain critical thresholds, there is a substantial increase in quality problems. Second, there is the simulation evidence presented in Chapter 3 that essential care processes that have been demonstrated to result in good quality require a level of nurse aide staffing not obtained by the vast majority of nursing homes. Staffing less than these minimum levels necessarily results in meals that are late, and longer waits for the changing of wet clothing. Third, there is evidence from an observational study of nurse aides on how they managed to survive as a NA when there was simply not enough time to do what the job required (Bowers and Becker, 1992). "Cutting corners" from required care giving tasks was a common strategy of those aides who stayed in contrast to those aides who left:

> ". . . experienced NAs selected cuts that fell primarily into two categories. First, cuts were selected that could not be traced to any particular NA so that blame could be spread as widely as possible. Shared versus individual accountability was an important organizing dimension of the work. Second, cuts were selected where the work is easily undone and there is no way to know whether it was undone or never done . . . it was possible, for example, to significantly reduce the work load by changing frequent 'wetters' at predetermined times rather than immediately after an incontinent episode . . ."

To the degree that staff shortages and turnover are reciprocal processes, it is likely that there will be pressures toward "cutting corners" which will in turn have a negative impact on quality. Of course, nursing home administrators have employed a number of strategies to mitigate these problems of staff shortages and turnover. These strategies include: paid overtime, increased workload, canceling days off, increasing scheduled hours, payment of shift differential, and asking for volunteers to work extra (e.g., double shifts). Another common strategy is the use of temporary or agency staff, particularly by facilities with high turnover rates (Straker and Atchley, 1999).

16 See Phase 1 Report, chapter 5.

It is difficult to know how effective these management strategies are for mitigating the impact of staff shortages and turnover on resident quality of care. It is often claimed that the use of agency staff reduces the familiarity with the resident and creates morale problems from regular staff, as described above. However, the qualitative care studies of staffing issues conducted for this Phase 2 Report found that the use of agency staff did not negatively impact patient quality (see Chapter 6). *Under conditions of being short staffed*, it may be better for patient quality to use agency staff then to go short staffed and have regular staff burnout. It is also possible that continuity of care can be maintained under conditions of high turnover if some minimum level of staff retention is also maintained. Although it is mathematically possible for some facilities to have both high retention and turnover, it is unknown whether empirically this actually occurs.

Finally, it should be noted that *some* degree of turnover is not only inevitable, but desirable. Quality might improve if poor performing employees leave and well performing employees are promoted. Without larger samples and better measures of turnover, it is not possible to conduct adequate studies. These studies could definitively examine whether there are critical turnover ratios above which patient quality is seriously compromised. In addition, it would be important to know the relative importance of staffing levels and turnover or staff retention to quality problems. On-going work with the data files constructed for this Phase 2 report will examine this question.

4.3 Quantitative Analyses of Turnover and Retention in Nursing Homes: Overview

While turnover exists in all sectors of the labor force, nursing homes have higher turnover rates than other parts of the service sector, and nurse aides have the highest turnover rate among service sector occupations.17 In addition to its potential impact on quality of care, turnover has a large impact on facility costs, given that it costs facilities several thousand dollars to hire and train each new employee.

Most previous research on nursing home turnover has been either qualitative or based on data from a small number of facilities or nurses. As a result, little is known about how turnover rates vary across facilities, or how the relationship of turnover to facility characteristics (e.g., ownership type, for-profit status, size), wage and benefit levels, staffing patterns, and county labor market conditions (unemployment rate, per capita income). These issues have not been examined in detail primarily due to a lack of data. Staff turnover data are not routinely collected by the Center for Medicare and Medicaid Studies (CMS), nor are they typically part of state Medicaid Cost Reports or national sample surveys such as the Medical Expenditures Panel Survey and the National Nursing Home Survey.

17 Sources: Mercer and Mercer, 1998, Salmon et al, 1999.

Following an exhaustive search, we identified three states — California, Kansas, and Wisconsin — for which facility-level turnover data are available. Data for calendar year 1999 were obtained from each of these states and used to address three basic research questions:

- What are mean turnover levels for nursing staff?
- What is the distribution of turnover across facilities?
- How do factors such as wage rates, benefit levels, staffing levels, facility characteristics, and area characteristics affect turnover rates?

Turnover rates were high in all three states. In California, the mean turnover percentage for direct nursing employees was 72 percent. The mean turnover percentage for nursing staff (including RNs, LPNs, and nurse aides) was 63 percent in Wisconsin, and 85 percent in Kansas. Turnover among nurse aides was higher than for RNs or LPNs. In California, only 22 percent of nurse aides had continuous service through the entire year and the average turnover percentage was 78 percent. The average turnover rate for nurse aides in Kansas was 100 percent and 76 percent in Wisconsin.

There was considerable variation in turnover levels across facilities. In California, 25 percent of facilities had a turnover percentage among direct nursing employees of 45 percent of less, while 23 percent of facilities had a turnover rate of 100 percent of more. In Kansas, 21 percent of facilities had a turnover percentage among all nursing staff of 50 percent or less, but the turnover percentage for the top quartile of facilities was 110 percent or higher. In Wisconsin, the lowest quartile of facilities had a mean turnover percentage among all nursing staff of 37 percent or less, while 25 percent of facilities had turnover of at least 81 percent.

Differences in wage rates explained only a small portion of the facility level variation in turnover. In California, nurse aide turnover was 83 percent for facilities in the lowest wage quartile (based on wage figures adjusted for cost of living differences), somewhat higher than the 73 percent turnover for facilities in the highest wage quartile. In Kansas, however, average nurse aide turnover was actually slightly higher (107 percent) for facilities in the highest wage quartile than for facilities in the lowest quartile, for which mean turnover was 96 percent.

A series of multivariate regression models were estimated to understand further the relationship between turnover and wage rates, benefit levels, facility characteristics and local labor market conditions. Regression results for California indicated that turnover for both nurse aides and all direct nursing employees was significantly lower for facilities with generous benefits (this was calculated based on the ratio of benefit-to-salary expenditures). Turnover was significantly lower in facilities with 100 or more beds and significantly higher at for-profit facilities. Among nurse aides in California, turnover was lower for higher

staffed facilities, facilities that pay higher wage rates, facilities with higher expenditures on benefits, and large facilities. While nurse aide turnover was not related to county unemployment rate, turnover was significantly higher in counties with higher per capita income. In Wisconsin, nursing turnover was significantly lower in facilities with higher staffing levels (based on nursing hours per resident day). Turnover was higher at for-profit facilities and also for facilities associated with a chain. It was lower for facilities in counties with high unemployment rates. Note that no wage or benefit data were available for Wisconsin, so we were unable to analyze how these factors were related to turnover. Among Kansas nursing facilities, neither wage rates nor benefit levels were related to turnover levels.

The variation in turnover rates across facilities suggests that nursing home turnover can be reduced. The regression model results suggest that only a small amount of the differences across facilities in turnover rates are due to wage and benefit levels, observable facility characteristics, staffing levels, or local labor market conditions. The relatively low statistical power of these models implies that most of the variance in turnover rates is due to the types of facility practices described in the next chapter.

Knowledge about the distribution of turnover and factors that affect it is important for policymakers as they evaluate the desirability and costs of a minimum nurse staffing requirement or programs intended to reduce turnover, such as the wage pass-through programs that a number of states have implemented. It is also important for facilities, as they design and consider the potential impact of programs to attract and retain quality staff.

4.4 Data Sources

We acquired data from three states — California, Kansas, and Wisconsin that require facilities to submit data on nursing staff turnover. These data were also used to identify the high and low turnover facilities for the site visits described in another chapter in this report.

- ***California:*** Long Term Care Facility Integrated Disclosure and Medi-Cal Cost Reports (Disclosure Report) for calendar year 1999 were acquired from the state's Office of Statewide Planning and Development (OSHPD).

- ***Kansas:*** Medicaid Cost Report data for 1999 were acquired from the state's Department of Aging. Section J of the Cost Report contains turnover statistics.

- ***Wisconsin:*** Turnover data were collected as part of the state's 1999 Annual Survey of Nursing Homes, which was conducted by the Wisconsin Division of Health Care Financing, Bureau of Health Information.

Calculating turnover and staff continuity measures

Turnover was calculated by comparing the total number of employees who worked during the year to a measure of the average number of employees at a given point during the year.

For each of the three states, we were able to determine total turnover (among RNs, LPNs, and nurse aides), as well as turnover for individual staff categories (the available categories varied by state). Due to the available data, turnover was calculated in a slightly different way for each state.

Some previous studies exclude part-time employees from the turnover calculation, since turnover among these staff result in less impact on facility staffing. It was not possible, however, to measure separately turnover for full and part time staff in any of the three states for which we had data. Also, it was not possible to determine whether turnover was due to voluntary or involuntary separations.

California. The California data include annual turnover percentage and the number of staff with continuous service throughout the one-year reporting period. Figures are reported for nurse aide, and for all direct care staff, a category that includes all employees who provide direct nursing care (e.g., RNs, LPNs, nurse aides, technicians, specialists.). No separate turnover figures are available for RNs or LPNs. Also it is not possible to distinguish full and part time employees. Turnover percentage is calculated by each facility, using this definition:

100 * (total number of employees during the period) / (average number of employees) - 100

We calculated a staff continuity measure based on the number of staff with continuous service divided by the average number of employees during the cost report period.

Kansas. Information on the average number of employees during the period is not available. There is, however, information on the number of employees at the beginning and end of the Cost Report period, allowing an estimate of the average number of employees. Turnover was calculated as:

100 * (total number of employees during the period) / 0.5 * (number of employees at beginning of period + number of employees at end of period) - 100

The Kansas data allow turnover to be calculated separately for RNs, LPNs, and nurse aides. A measure of overall turnover was calculated as the weighted average of turnover for each staff, weighted by each staff type's contribution to total nurse staffing. While Section J of the Kansas Cost Report form asks for separate information on full and part-time information, we were advised by the Department of Aging that the data on full and part-time employees was not reliable and should not be used.

Wisconsin. The Wisconsin data include employment figures only for the end of the period, and the definition of turnover percentage had to modified slightly:

100 * (employees at end of period + employees hired during period) / (employees at end of period) – 100

The Wisconsin data do not allow turnover rates to be calculated separately for full and part time employees.

Calculating Wage Rates and Fringe Benefits

For Kansas and California, it was possible to calculate average hourly wage rates for RNs, LPNs, and nurse aides, based on total salary and wages paid to each staff type and hours worked or paid. The California data report total hours actually worked, not hours paid, while the Kansas data report total hours paid. As a result, the hourly wage rate figures for the two states are not directly comparable. No wage information is reported in the Wisconsin data.

Both California and Kansas report total expenditures for fringe benefits across the entire facility, but do not have a breakdown of the amount of benefit costs that are allocated to nursing staff. The benefit rate for Kansas was defined as the percentage of total facility costs (from Schedule A of the Cost Report) related to benefits. For California, benefit percentage was defined as the ratio of fringe benefit to payroll costs. The differences in definition were related to the data available for calculating benefits.

Adjusted wage rates

Part of the difference in wage rates across facilities reflects differences in the cost of living. We created an adjusted wage rate using CMS's urban and rural wage indexes. The wage index is designed to reflect local differences in wage levels. It is determined by computing the hourly wage rate for a metropolitan statistical area or non-urban area by the national hourly wage rate. These wage rates are based on hospital wage index data for fiscal year 2000.

Exclusions

For all three states, turnover statistics are based on unaudited, self-reported data from providers. The data are only as reliable as the reports submitted by providers. We developed a set of decision rules to exclude facilities that appeared to have unreliable turnover data. Because we only had data from one year, we could not examine the longitudinal changes in turnover, but excluded facilities that had internal inconsistencies in the data used to calculate turnover or extreme outlier values that suggested data errors.

- ***California:*** There was one facility that reported a negative turnover percentage for the year—it was excluded, as were facilities that had apparent inconsistencies in their reported staffing levels and/or hours worked. This includes facilities that had an average hourly wage rate for nurse aides or direct nursing employees of less than $4.75 per hour, or a wage rate of more than $20 per hour for nurse aides or $40 per

hour for direct nursing employees. These exclusions affected 79 of the 1,238 facilities in the California data.

- ***Kansas:*** Thirty-five of the 362 facilities in the state reported no turnover for RNs, LPNs or nurse aide for all of 1999. While it is possible that some of these facilities actually did not have any turnover, it is much more likely that these facilities simply failed to complete accurately the turnover section of the Cost Report. These facilities were excluded from our analyses, as were facilities for which there were inconsistencies in reported staffing information. Facilities for which the difference in the number of employees at the beginning and end of the period did not equal the net of new employees hired during the period and employees terminated during the period. These exclusions affected 121 (28.5 percent) of facilities in the state. This large number of facilities with apparent data problems raises concerns about the reliability of the Kansas data.

- ***Wisconsin:*** There were three facilities that reported no turnover for all of 1999 — these facilities were excluded, as were two other facilities that reported no nurse aide turnover for the year. It is not possible to know with certainty whether turnover statistics from these facilities are reliable, but these facilities had other data irregularities that made their turnover data appear unreliable. For example, none of these facilities reported employing any nurse aides (either full or part time) for the two-week period that the state collects staffing data as part of its Annual Survey of Nursing Homes.

Other Data Sources

Several other data sources were used to create variables that were used as independent variables in the regression models.

- ***OSCAR:*** The Center for Medicare and Medicaid Services Online Survey Certification and Reporting System (OSCAR) database contains information on every nursing home in the United States that is certified by Medicare and/or Medicaid. The data are collected by the state survey and certification agencies at the time of the facility=s survey (performed at least every 15 months). We used OSCAR to measure facility characteristics and staffing levels for Wisconsin nursing homes (the Cost Report data were used to measure these items for California and Kansas).

- ***Area Resources File***. The 2000 Area Resource File (ARF, http://www.arfsys.com/) contains more than 7,000 variables for each of the nation's counties. ARF contains information on health facilities, health professions, measures of resource scarcity, health status, economic activity, health training programs, and socioeconomic and environmental characteristics. In addition, the file contains geographic codes and descriptors which enable it to be linked to many other files and to aggregate counties into various geographic groupings. It was used to measure county labor market

conditions (unemployment rate, per capita income), as well as to create an indicator of county urban-rural status.

4.5 Hypotheses

Most previous research on nursing home turnover have been either qualitative (Atchley, 1996, Barry, 1996, Brannon and Smyer (1990), Caywood, 1998, McDonald C, 1992, McDonald and Muller, 1998), or based on data from a small number of facilities or nurses (American Health Care Association, 1998, Banaszak-Holl and Hines, 1996, Bell 1998, Broughton and Golden, 1995, Caudill and Patrick, 1989, 1992, Close et. al, 1994, Helmer et. al, 1993, Remsburg, et. al, 1999). A number of factors believed to influence turnover have been identified in these previous studies:

- **Wage and benefit levels**. *The low wage and benefit levels for nurse aides have been noted in many previous studies as a reason for high turnover among these staff. Susan Eaton (see the next chapter) found that the primary reasons given for nurse staff turnover were benefits and staffing levels, and that wages "also meant something" to nursing home workers. Bell, Brouthon and Golden, and Caudill and Patrick all identified higher wage rates as being associated with lower turnover among nurse aides. Close found that RN turnover increased with lower wage rates. Most studies, however, make clear that wage and benefit levels are but one factor that is related to turnover. The data available for California and Kansas permit us to measure how turnover rates vary based on the wage rates paid to nursing staff and facility benefit levels.*

- **Facility staffing levels** *Both qualitative and quantitative studies have found that low staffing levels are related to turnover. Eaton identified a sufficient staffing ratio as a key management practice related to low turnover. In a survey of Iowa nurse aides, Bell found that short staffing and wage/benefits were the main reasons that respondents were considering leaving their current job.*

- **Facility characteristics.** *Barry found that RN, LPN, and nurse aide turnover rates were lower for non-profit facilities, facilities with 100 or more beds, and facilities that were not associated with a nursing home chain. Banaszak-Holl and Hines also found that turnover was related to for-profit status. Broughton and Golden hypothesized that non-profit facilities may retain staff longer because they have higher occupancy rates, more private pay residents, and tend to be led by administrators with longer job tenure, suggesting more organizational stability.*

- **County characteristics.** *In a survey of 254 nursing home administrators and Directors of Nursing, Banaszak-Holl found that turnover was lower in counties with higher per capita income and higher in counties with more nursing home beds. While previous studies have not examined the relationship between unemployment rate and turnover, economic theory predicts that turnover should be higher in areas with low unemployment and greater job opportunities.*

There are some factors that have been identified as important predictors of turnover that we are not able to measure with our data. A number of studies, including Brannon and Smyer and McDonald have identified lack of training and career advancement paths as one reason for high turnover among nurse aides. C. McDonald found that career ladders can make employees feel valued and recognized, reducing turnover. The data available for this study did not include any information on the amount of training or the career paths available to nursing staff. Susan Eaton (see the next chapter) identified leadership and management, a culture of valuing and respecting caregivers, and organization practices as important factors that differentiate low and high turnover facilities. Banaszak-Holl and Hines found that the turnover rate in facilities in which nursing staff accepted the advice of nurse aides or simply discussed care plans with aides was 50 percent lower than in facilities without this practice.

4.6 Results

4.6.1 Average Turnover and Staff Continuity

Turnover rates were high in all three states, particularly for nurse aides. In two of the three states, however, turnover levels were lower than those found by the American Health Association, based on a survey of turnover in a sample of for-profit, chain affiliated facilites (AHCA, 1998). Turnover was considerably higher in Kansas than for either Wisconsin or California. Wage rates were higher in Wisconsin and California, but it is not possible to determine whether the across-state differences are due to wage rate differences or to other differences across the states. As expected, turnover was considerably higher for nurse aides than for RNs or LPNs.

Across the entire labor force, the overall turnover rate is estimated to be between 13 and 18 percent and 20 percent for service industries (Mercer, 1998). Average turnover in nursing homes was much higher than for other sectors of the service economy.

- In California, the mean turnover percentage for direct nursing employees was 72 percent (Table 4.1). The mean level for nurse aides was 78 percent. Nearly 35 percent of direct nursing staff were employed at the facility for the entire reporting period, but only 22 percent of nurse aides had continuous service throughout the year.

- Kansas had higher turnover than either California or Wisconsin. In Kansas, average turnover for nurse aides was 100 percent (Table 4.2). Turnover for RNs (55 percent) and LPNs (57 percent) was much lower. Data on staff continuity were not available for Kansas.

- The average turnover percentage for nurse aides in Wisconsin was 76 percent (Table 4.3). Turnover was 41 percent for RNs and 39 percent for LPNs. It was not possible to calculate staff continuity measures for Wisconsin.

4.6.2 Distribution of Turnover and Staff Continuity

In all three states, there was considerable facility level variation in turnover levels. Some facilities were able to keep turnover at low levels, while other facilities, often in the same labor market, experienced much higher turnover rates. A small number of facilities had extremely high turnover rates.

California. In California, median turnover among direct nursing employees was 63 percent, and the standard deviation was 39 percent (Table 4.1). Ten percent of facilities had turnover of 31 percent of less, while ten percent of facilities had turnover of more than 120 percent (Table 4.1, Figure 4.1). One-fourth of the state's nursing facilities had nurse aide turnover of 100 percent or more. Only 25 percent of facilities had nurse aide turnover of 46 percent or less (Table 4.1, Figure 4.2).

Similar variation was observed in the staff continuity measure:

- Among all direct nursing staff, ten percent of facilities reported that at least 61 percent of staff were employed for the entire year. Median staff continuity, however, was only 31 percent, and it was 15 percent or less at 10 percent of facilities (Table 4.1, Figure 4.3).

- As expected, staff stability was lower for nurse aides. Fewer than 25 percent of facilities had 30 percent of more of their nurse aides employed throughout the year, and 25 percent of facilities had staff continuity of 13 percent or less (Table 4.1, Figure 4.4).

Kansas. While turnover levels in the state were high, there were some facilities that were able to keep turnover at relatively low levels. Across all nursing staff, the top quartile of facilities had turnover of 110 percent (Table 4.2, Figure 4.5). Twenty five percent of facilities, however, were able to keep 54 percent of less. Nurse aide turnover in the state was extremely high at some facilities. The top quartile had nurse aide turnover of 132 percent per year, and 10 percent of facilities reported nurse aide turnover of at least 176 percent (Table 4.2, Figure 4.8). Fewer than 25 percent of the state's facilities were able to keep nurse aide turnover below 60 percent. Turnover for RNs and LPNs was considerably less than for nurse aides. One fourth of facilities had RN and LPN turnover of 25 percent of less. More than ten percent of facilities, however, had RN and LPN turnover of 100 percent of more (Figures 4.6 and 4.7).

Wisconsin. Overall turnover for Wisconsin facilities was lower than for California or Kansas, and this was especially true for facilities at the high end of the distribution. Only 25 percent of facilities had nursing staff turnover of more than 81 percent, considerably lower than the top quartile for the other two states (Table 4.3, Figure 4.9). Twenty five percent of the state's facilities reported overall turnover of 37 percent or less. The distribution of nurse aide turnover was quite similar for California and Wisconsin, although levels were slightly

lower in Wisconsin. Fewer than 25 percent of Wisconsin's facilities reported nurse aide turnover of 100 percent of more, while 10 percent had turnover of 26 percent or less (Figure 4.12). Consistent with Kansas, turnover for RNs and LPNs was much lower than turnover for nurse aides. A small number of facilities reported almost no RN or LPN turnover, while more than 25 percent of facilities had RN turnover of more than 50 percent (Figures 4.10 and 4.11).

Table 4.1
Turnover and Continuity Statistics: California, 1999

			Percentile				
	Mean	Std. Dev.	10	25	50	75	90
Employee turnover percentage							
Direct nursing employees	72.3%	38.6%	31%	45%	65%	93%	123%
Nurse aide	77.8%	45.8%	31%	46%	67%	100%	136%
Percentage of employees with continuous service throughout the year							
Direct nursing employees	34.8%	18.3%	15%	21%	31%	45%	61%
Nurse aide	22.4%	12.4%	9%	13%	20%	29%	39%

Notes: N= 1,167.

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.2
Turnover Statistics: Kansas, 1999

			Percentile				
	Mean	Std. Dev.	10	25	50	75	90
Total nursing staff	84.8%	42.3%	33%	54%	78%	110%	145%
RN	54.7%	43.1%	9%	24%	45%	75%	118%
LPN	57.2%	47.0%	9%	25%	45%	78%	120%
Nurse aide	100.1%	54.3%	35%	61%	92%	132%	176%

Notes: N= 454.

Sources: Kansas Department of Aging, Medicaid Cost Report Data, 1999

Table 4.3
Turnover Statistics: Wisconsin, 1999

			Percentile				
	Mean	Std. Dev.	10	25	50	75	90

Table 4.3
Turnover Statistics: Wisconsin, 1999

			Percentile				
	Mean	Std. Dev.	10	25	50	75	90
Total nursing staff	63.3%	38.1%	24%	37%	57%	81%	112%
RN	41.2%	43.0%	7%	17%	32%	54%	80%
LPN	38.7%	40.5%	0%	13%	27%	50%	88%
Nurse aide	76.2%	47.7%	26%	43%	67%	97%	142%

Notes: N= 454

Sources: Wisconsin Division of Health Care Financing, Bureau of Health Information, Annual Survey of Nursing Home, 1999

Figure 4.1: Distribution of Direct Nursing Care Staff Turnover: California

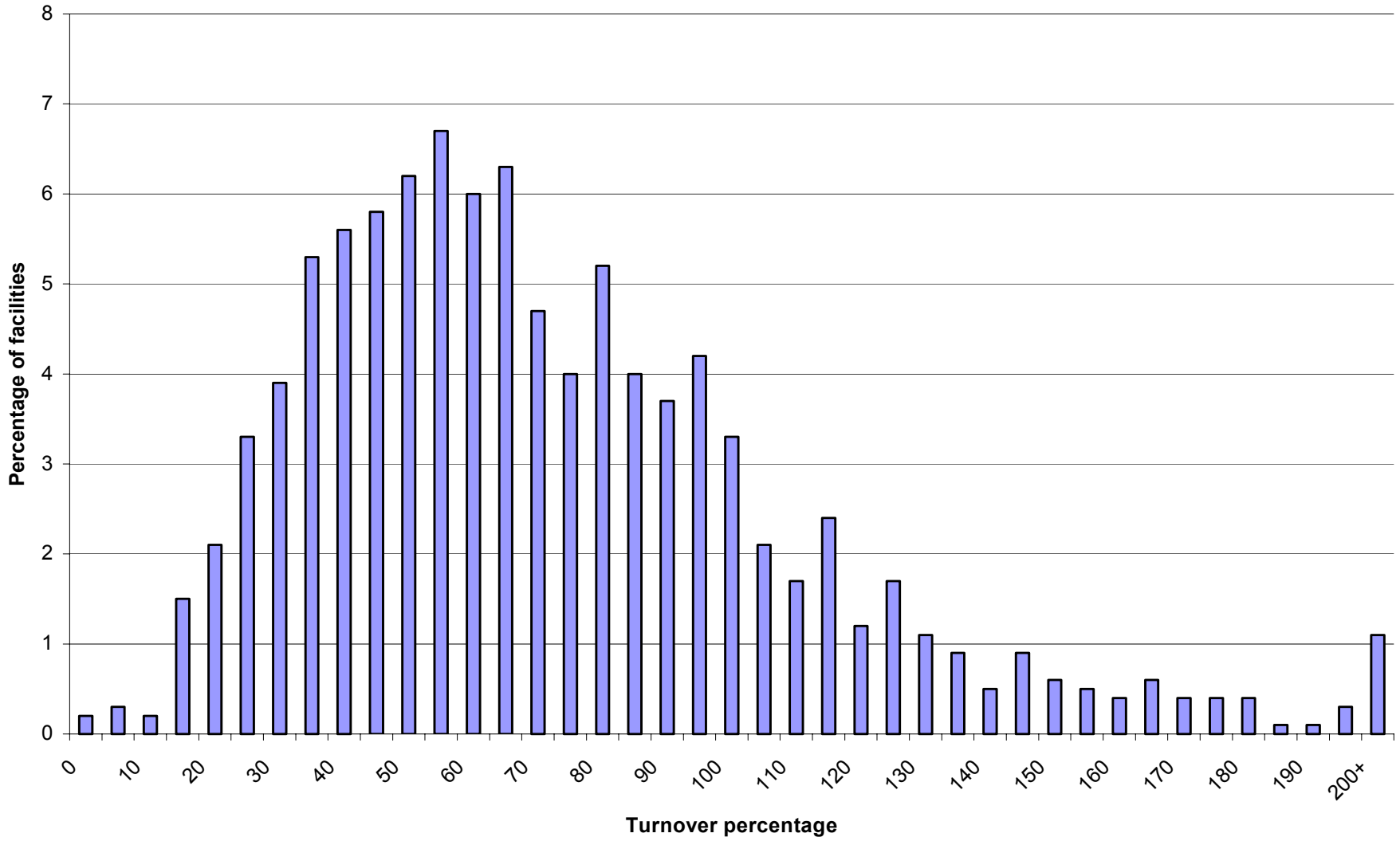


Figure 4.2: Distribution of Nurses Aide Turnover: California

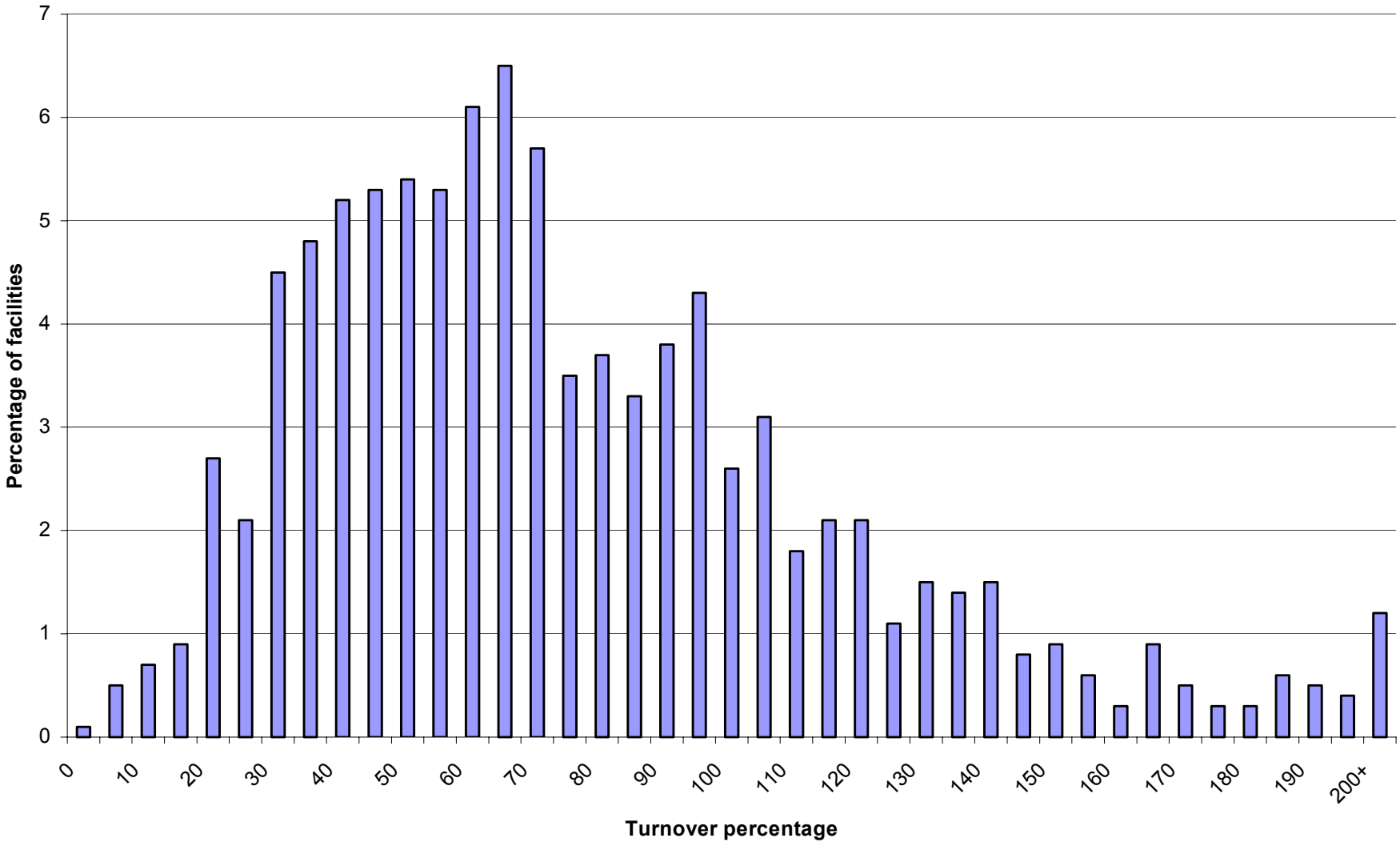


Figure 4.3: Distribution of Direct Nursing Care Staff Retention: California

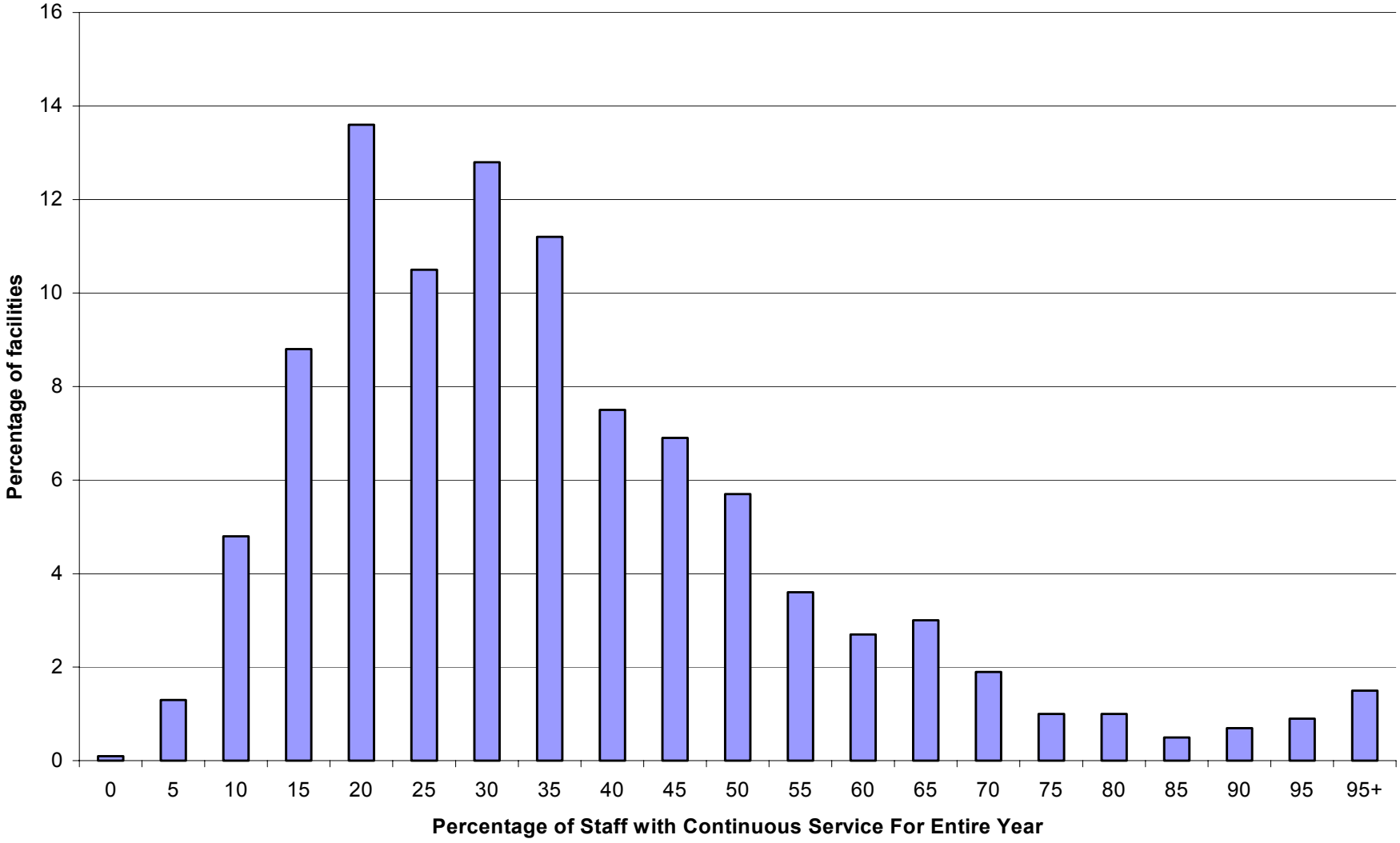


Figure 4.4: Distribution of Nurse Aide Retention: California

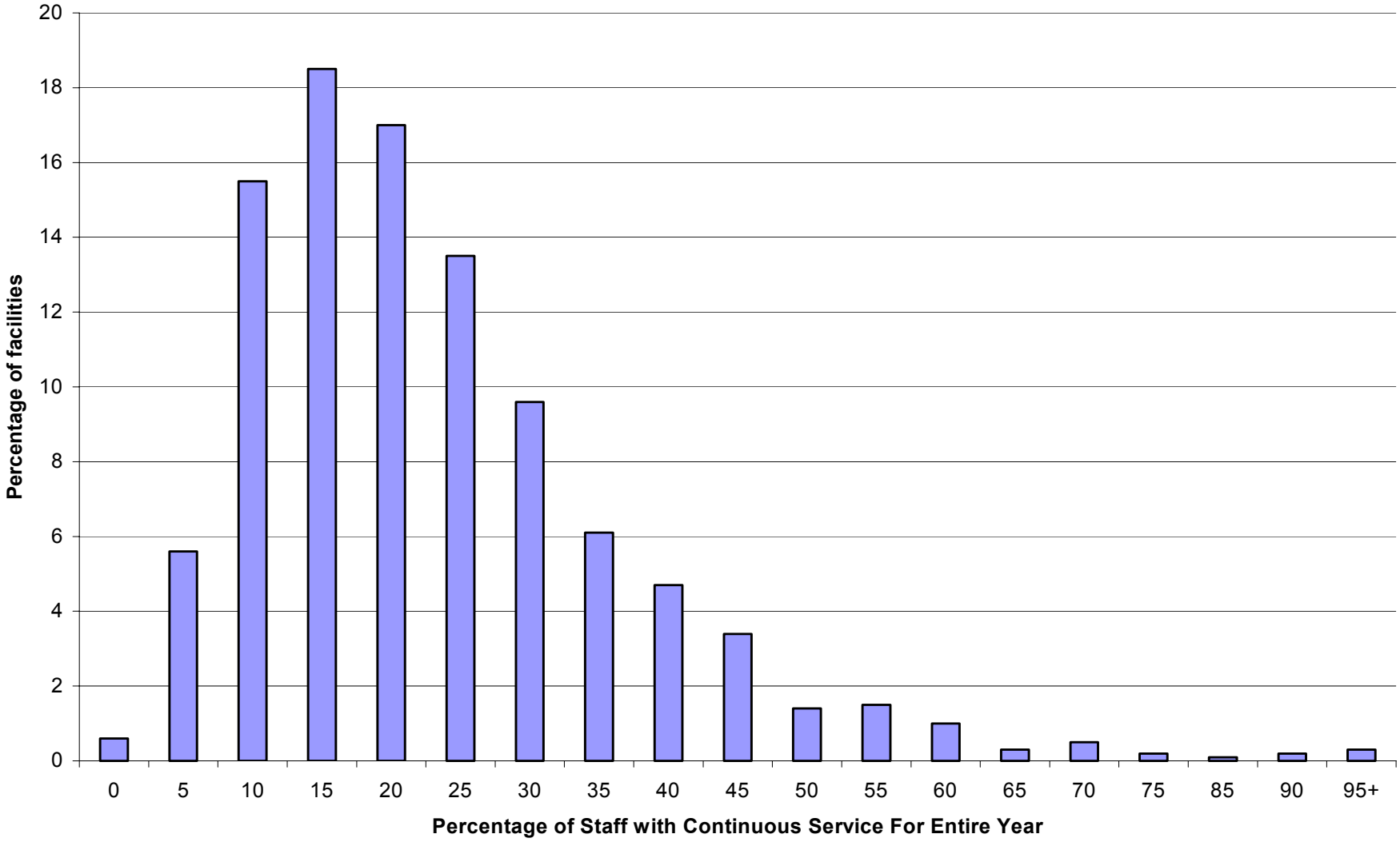


Figure 4.5: Distribution of Total Nursing Turnover: Kansas

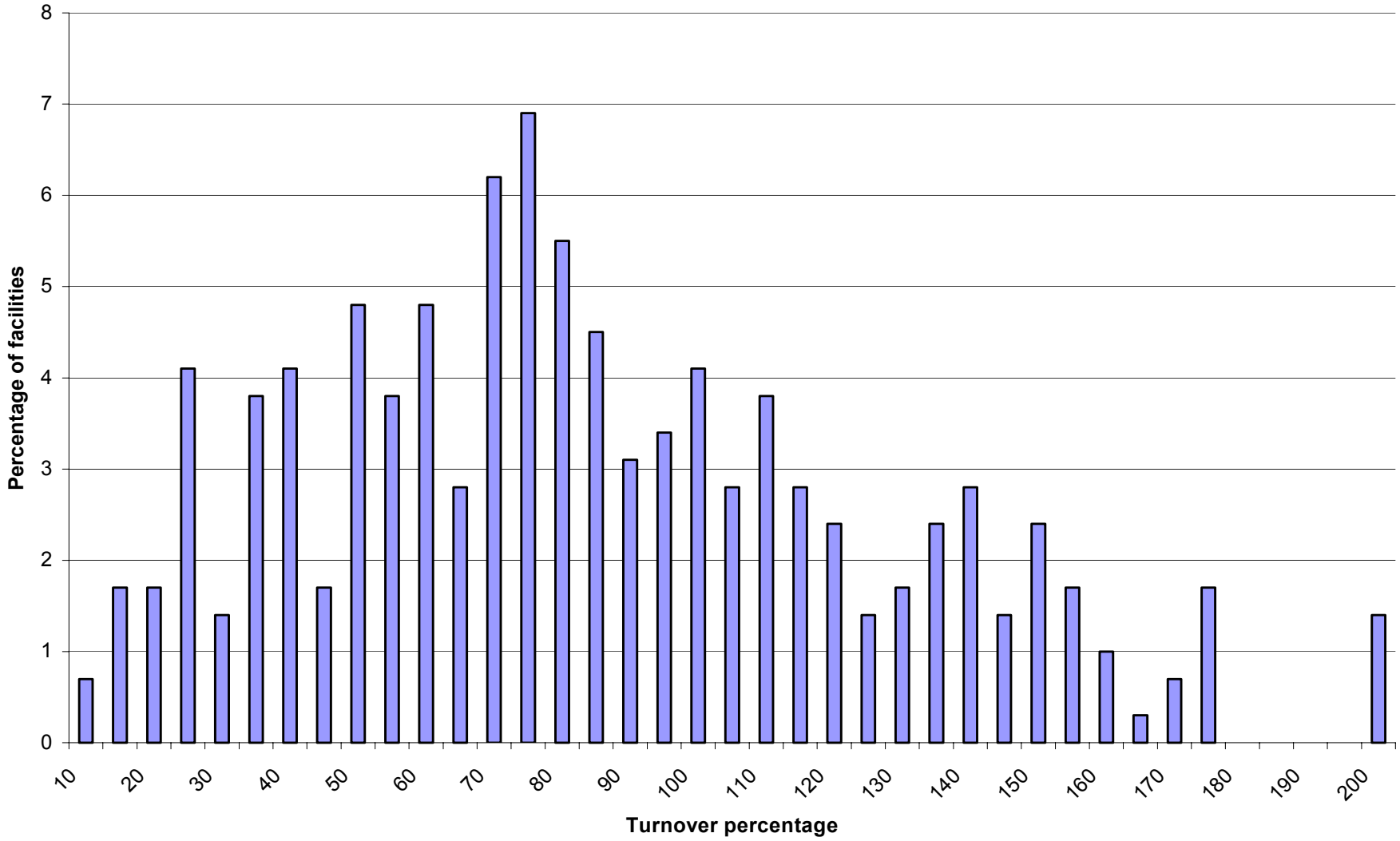


Figure 4.6: Distribution of RN Turnover: Kansas

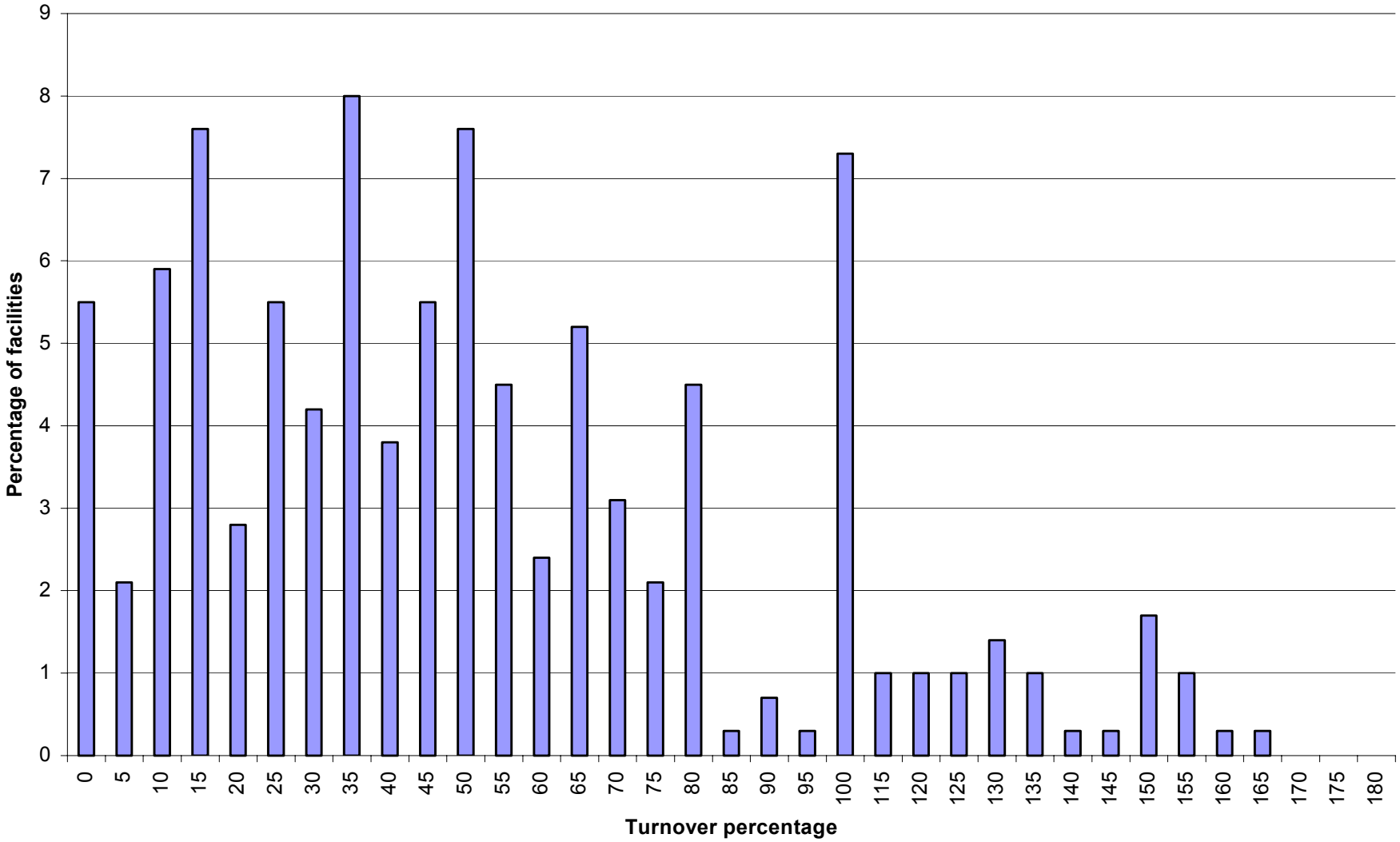


Figure 4.7: Distribution of LPN Turnover: Kansas

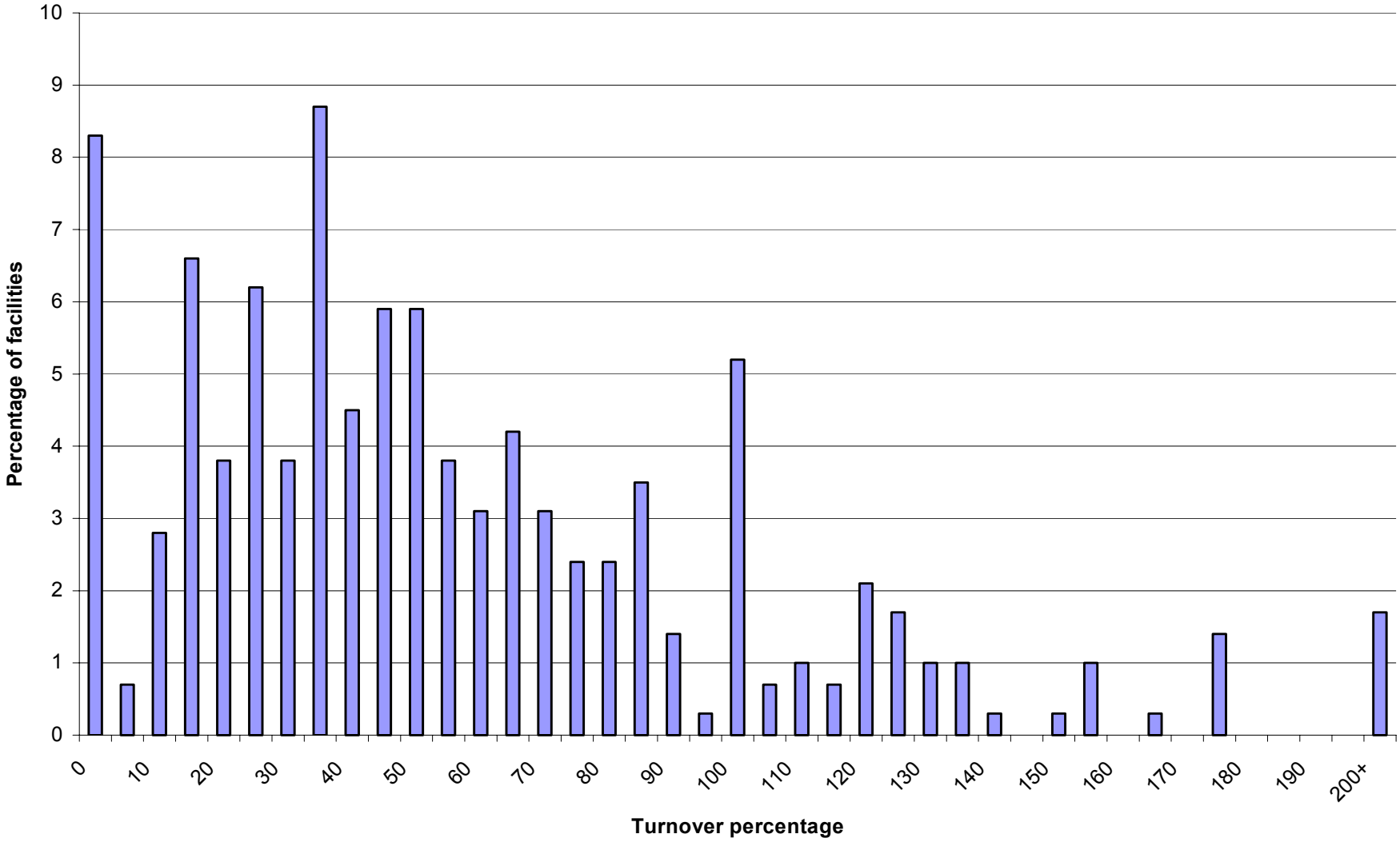


Figure 4.8: Distribution of Nurse Aide Turnover: Kansas

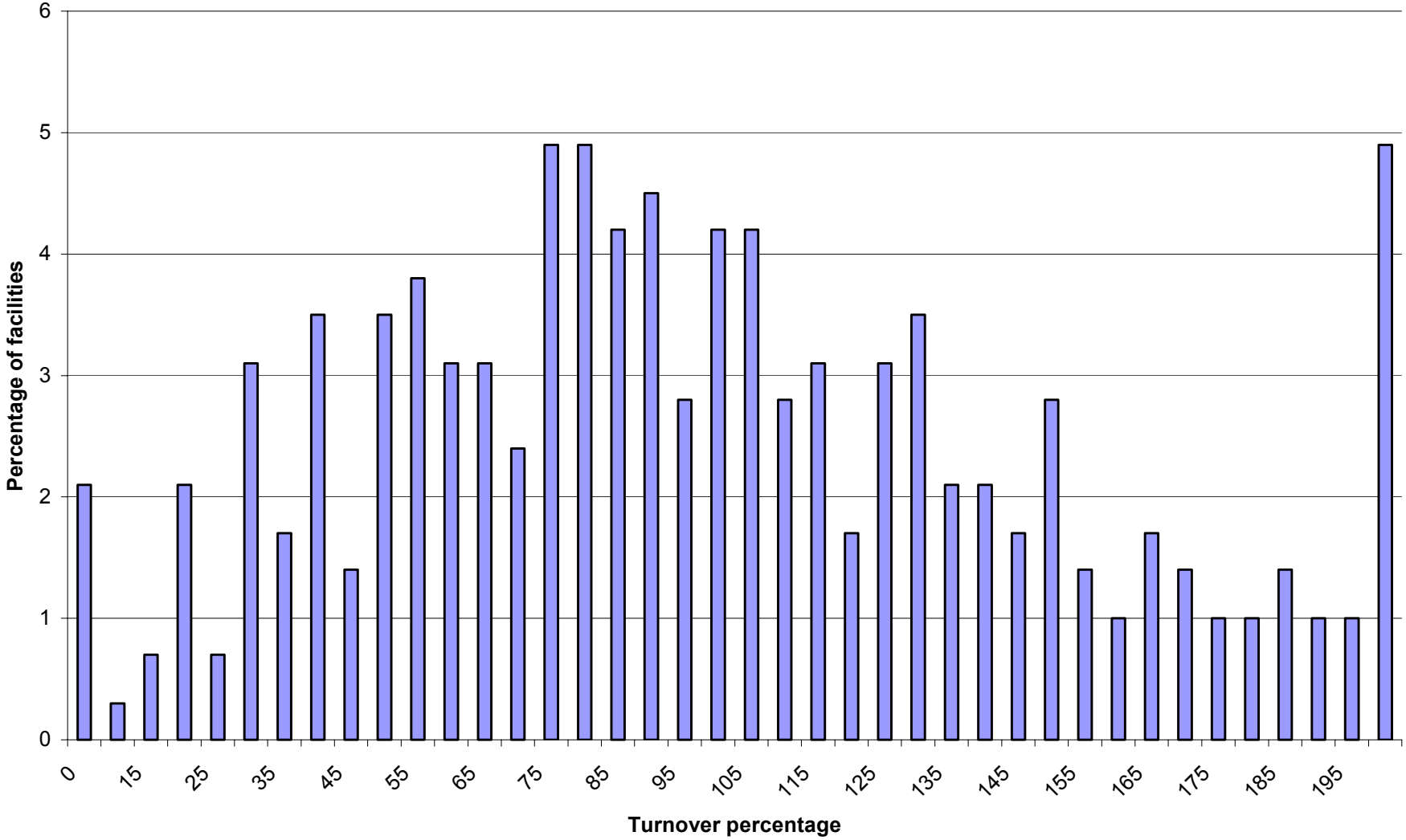


Figure 4.9: Distribution of Total Nursing Turnover: Wisconsin

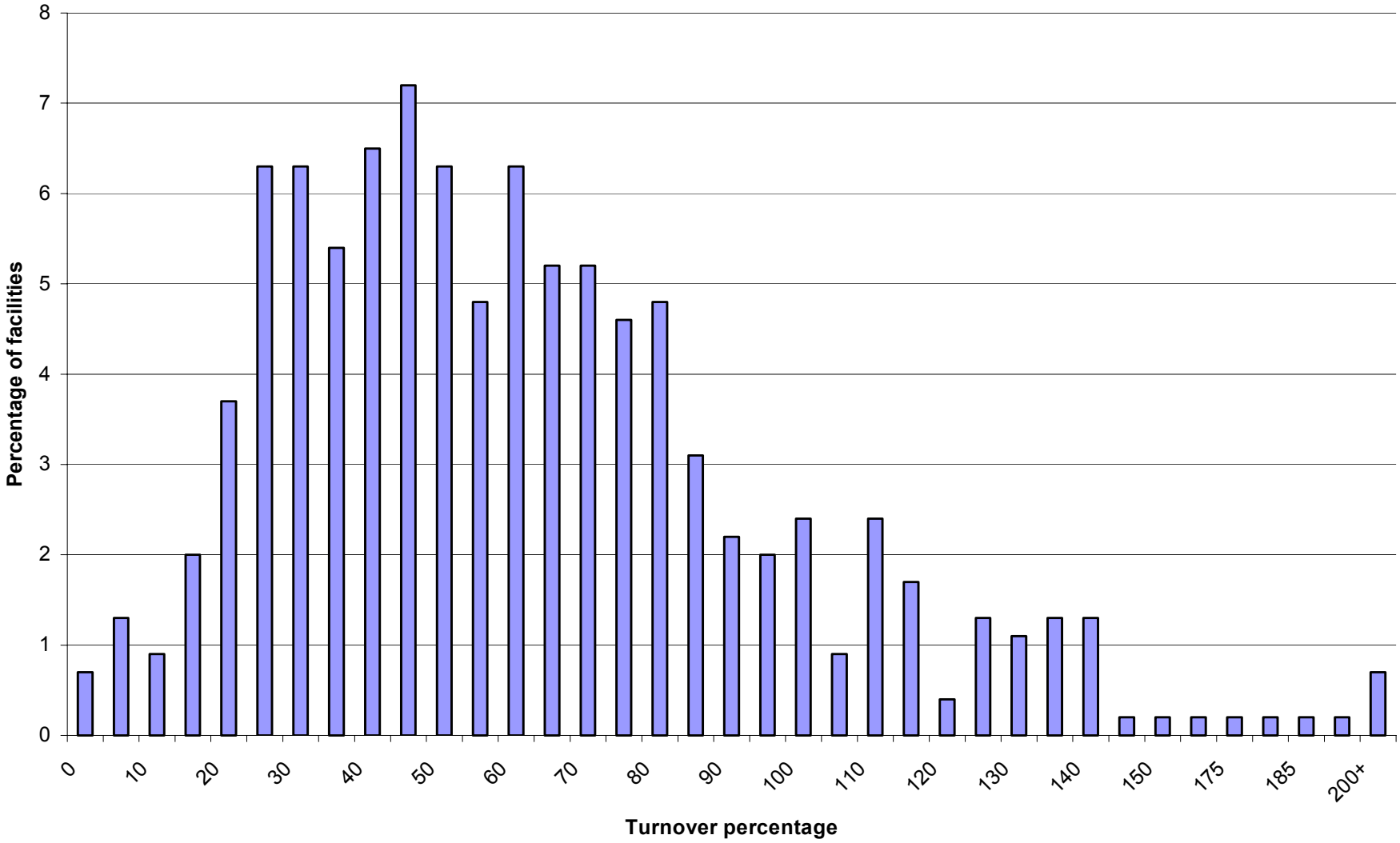


Figure 4.10: Distribution of RN Turnover: Wisconsin

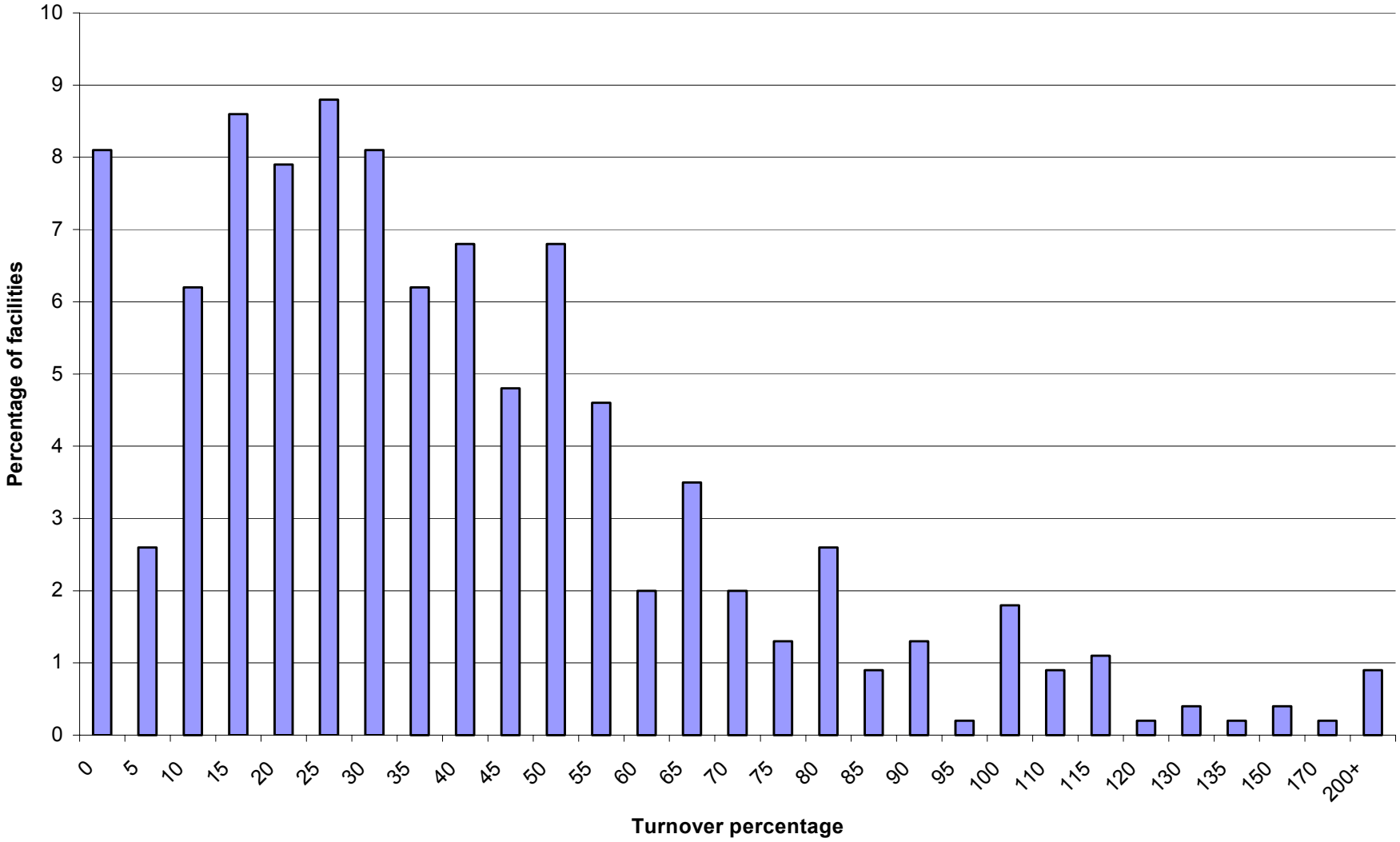


Figure 4.11: Distribution of LPN Turnover: Wisconsin

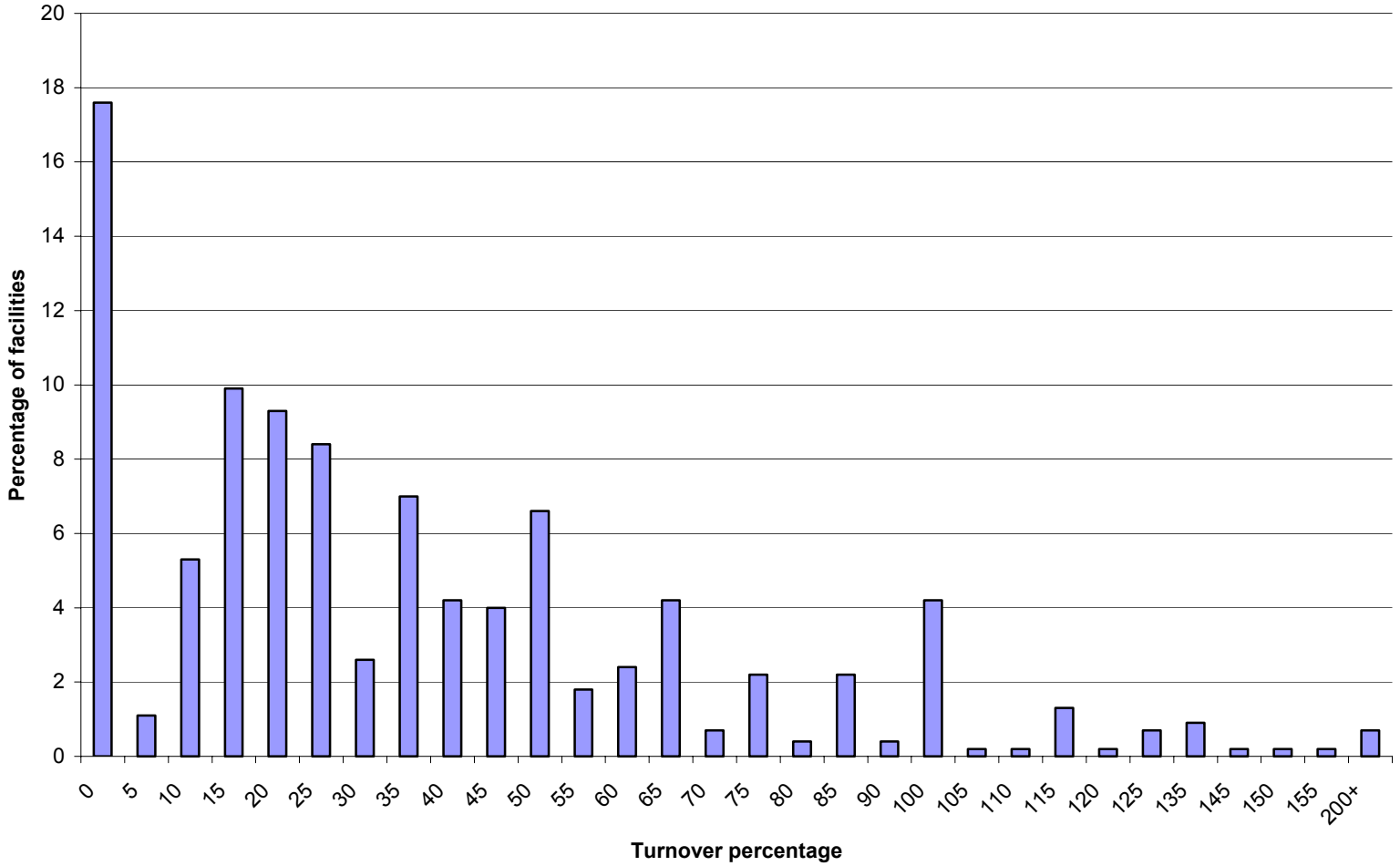
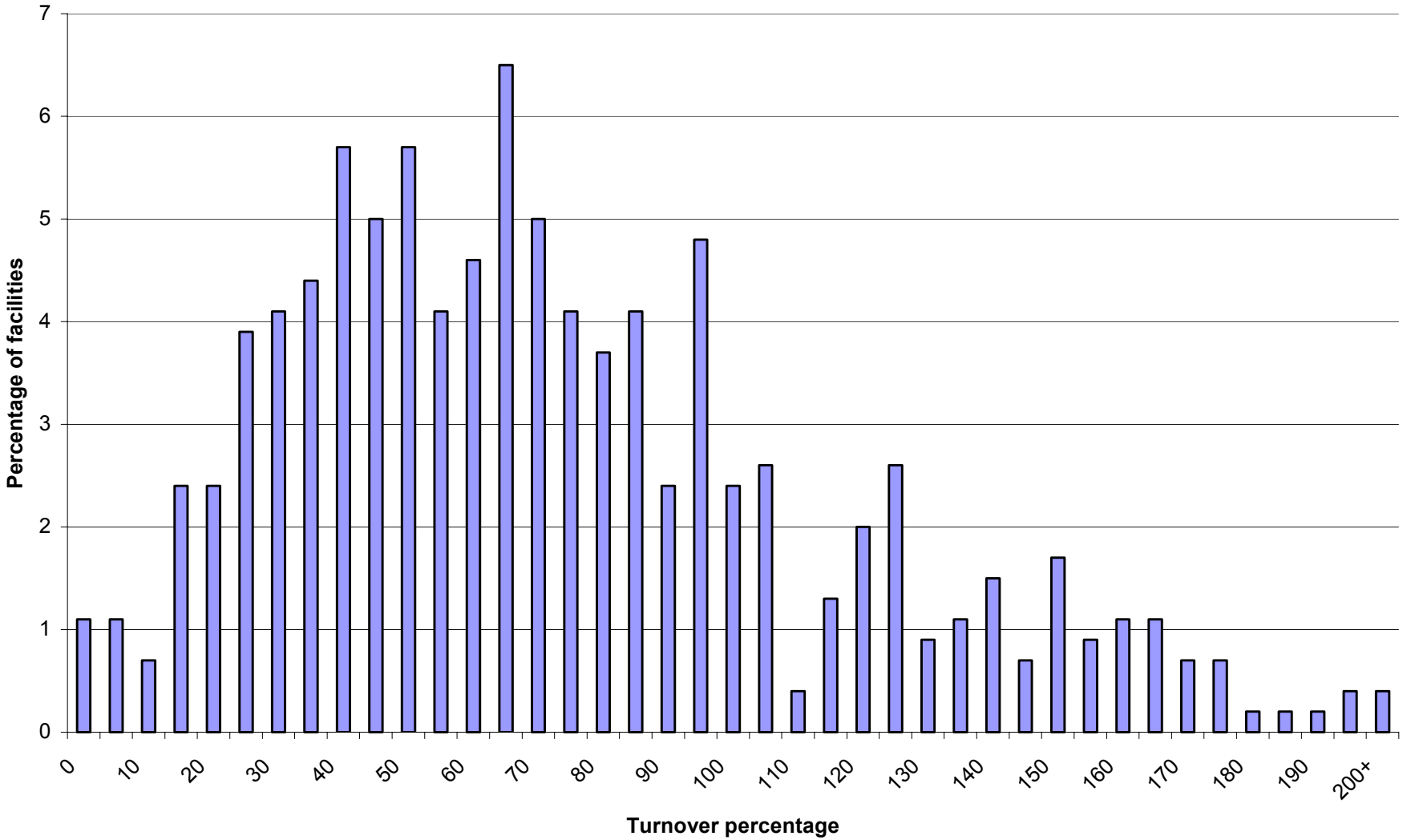


Figure 4.12: Distribution of Nurse Aide Turnover: Wisconsin



4.6.3 Distribution of Wage and Benefit Levels

Low wage and benefit levels are widely cited as an important cause of nursing home turnover, especially for nurse aides. A major goal of this research is to measure the relationship between wage rates and turnover levels. Wage rate data were available for California and Kansas, but not Wisconsin. A first step in this analysis was to examine the distribution of the wage rates paid to RNs, LPNs, and nurse aides across facilities. In order for turnover to be related to wage rates, there must be variation across facilities in the wage rates paid to nursing staff. (Note that the wage figures discussed in this section are actual wage rates and are not adjusted for differences in the area wage index. Adjusted wage rates are used in the regression models described in Section 4.6.5).

- The average wage for RNs in California was $20.58 per hour, and the standard deviation was $2.79. Twenty-five percent of facilities paid their RNs $22.33 or more per hour, while the lowest quartile paid RNs $18.75 per hour or less (Table 4.4).

- The average wage rate for RNs in Kansas was considerably lower ($17.35 per hour) (Table 4.5), although the distribution was similar. In Kansas, 25 percent of facilities paid RNs at least $19.04 per hour, while 25 percent paid RNs $15.40 per hour or less.

- In California, the average wage rate for LPNs was $15.79 per higher (Table 4.4), compared to $12.83 per hour in Kansas (Table 4.5). There was somewhat more variance in LPN wage rates in California — the standard deviation was $2.07 in California, compared to $1.78 per hour in Kansas. In California, 80 percent of facilities had an LPN wage rate between $13.46 and $18.42 per hour (Table 4.4). Ten percent of Kansas facilities paid LPNs $10.72 per hour or less, while the top ten percent of facilities have an LPN wage rate of $15.23 or more (Table 4.5).

- At half of the state's nursing homes, California nurse aides had hourly wage rates between $7.22 and $8.95 per hour. Ten percent of facilities paid their nurse aides $10.00 per hour or more (note that we are not able to determine whether the extent to which this is due to higher base wage rates or greater use of overtime at these facilities) (Table 4.4). Ten percent of facilities in the state paid nurse aides $6.81 per hour or less, not much above the minimum wage.

- While the average nurse aide wage rate in Kansas was slightly lower ($8.04 per hour, versus $8.19 per hour in California), the distribution was similar. Fifty percent of facilities in Kansas paid nurse aides between $7.25 and $8.73 per hour. Ten percent of facilities paid nurse aides $9.69 per hour or more, while the lowest 10 percent of facilities paid their nurse aides $6.76 per hour or less.

We also examined the facility-level variation in facility benefit costs. While the different method used to calculate benefit costs in California and Kansas make it impossible to compare benefit levels between the two states, there was considerable variation in benefit levels across facilities. In Kansas, on average, benefit expenditures represented about 6

percent of total facility expenditures. Fifty percent of facilities had benefit expenditures between 4.7 and 6.8 percent, while 10 percent of facilities devoted 8.1 percent or more of total expenditures to benefits.

Table 4.4
Wage Rates and Fringe Benefit Percentage: California, 1999

			Percentile				
	Mean	Std. Dev.	10	25	50	75	90
RN	$20.58	$2.79	$17.36	$18.75	$20.53	$22.33	$24.64
LPN	$15.79	$2.07	$13.46	$14.37	$15.54	$17.08	$18.42
Nurse aide	$8.19	$1.39	$6.81	$7.22	$7.88	$8.95	$10.00
Benefit percentage	25.80	6.20	18.70	21.20	25.10	29.10	34.30

Notes: N= 1,167

Benefit percentage applies to all nursing home staff and is calculated as the total expenditures on benefits divided by total facility payroll expenses.

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.5
Wage Rates and Fringe Benefit Percentage: Kansas, 1999

			Percentile				
	Mean	Std. Dev.	10	25	50	75	90
RN	$17.35	$2.99	$14.56	$15.40	$17.11	$19.04	$20.75
LPN	$12.83	$1.78	$10.72	$11.70	$12.61	$13.86	$15.23
Nurse aide	$8.04	$1.19	$6.76	$7.25	$7.89	$8.73	$9.69
Benefit percentage	5.90	2.10	3.70	4.70	5.60	6.80	8.10

Notes: N= 284

Benefit percentage applies to all nursing home staff and is calculated as the percentage of total facility costs related to benefits.

Sources: Kansas Department of Aging, Medicaid Cost Report Data, 1999

4.6.4 Relationship Between Turnover and Wage and Benefit Levels: Descriptive analysis

We examined turnover and staff stability measures stratified by facility wage and benefit quartiles. These analyses suggested that, while turnover was somewhat lower in higher paying facilities, benefits seemed to have a stronger relationship with turnover.

Wage Rates

- In California, turnover among all direct nursing staff was somewhat lower at higher paying facilities, although the relationship was small. Turnover was 73 percent at facilities in the lowest wage quartile (based on the average hourly wage rate paid to

RNs, LPNs, and nurse aides, weighted by the share of each category in total nursing hours at the facility), 76 percent for facilities in the second quartile, 71 percent for the third quartile, and 70 percent for facilities in the top quartile (Table 4.6).

- There was a somewhat stronger relationship between nurse aide turnover and wage rates. Nurse aide turnover was 84 percent for facilities in the lowest (nurse aide) wage quartile, 79 percent for the second quartile, 74 percent for the third quartile, and 73 percent for facilities in the top quartile. The $1,73 per hour wage difference between the first and fourth quartiles (from Table 4.5) was thus associated with an 11 percent reduction in turnover.

- Similarly, staff continuity was somewhat higher at facilities with more generous wage rates. The percentage of direct nursing staff with continuous service throughout the year was 31 percent for facilities in the lowest wage rate quartile, compared to 38 percent for facilities in the third wage rate quartile and 37 percent for facilities in the highest quartile.

- The percentage of nurse aides with continuous service was slightly higher at facilities with higher wage rates. Only 19 percent of nurse aides at facilities in the lowest wage quartile stayed at their jobs for the entire year, compared to 25 percent for the third highest quartile and 23 percent for facilities in the highest wage rate quartile.

In Kansas, turnover rates were actually somewhat higher at higher paying facilities.

- RN turnover in the state was 55 percent for facilities in the lowest wage rate quartile, somewhat lower for facilities in the middle two quartiles, and 64 percent for facilities in the highest quartile (Table 4.7).

- A similar pattern was observed for LPNs. Turnover ranged from 55 percent for facilities in the lowest wage rate quartile to 60 percent for facilities in the third quartile, and 63 percent for facilities in the highest quartile.

- For nurse aides, turnover was 96 percent for facilities in the lowest quartile, 106 percent for the second quartile, 85 percent for the third quartile, and 107 percent for facilities in the highest quartile. This inconsistent pattern suggests that differences in wage rates are not a major driver of the differences in turnover described above.

Benefit Levels

The relationship between benefit levels and turnover was strong for both California and Kansas. This suggests that a benefit increases may be more effective than wage rate increases in reducing turnover, particularly for facilities with relatively low benefit levels. The available data do not permit us to identify the types of benefits offered by facilities (e.g., vacation, sick time, health insurance, other), or even how the benefits at the facility are

distributed across different employee categories (e.g., the proportion of benefit expenditures related to nurse aides). Our results, however, do suggest that there is a strong relationship between benefit levels and turnover.

- In California, turnover among direct nursing employees was 84 percent for facilities in the lowest benefit quartile, 73 percent for the second quartile, 71 percent for the third quartile, and only 63 percent for facilities in the top quartile in terms of benefit levels (Table 4.8). From Table 4.5, the benefit percentage (defined as the ratio of benefit to payroll expenditures) was 21 percent or less for the first quartile and 29 percent or more for the highest quartile.

- Among nurse aides, average turnover was 89 percent for facilities in the lowest benefit quartile, but consistently lower for facilities with higher benefit levels. Nurse aide turnover was 67 percent for facilities in the highest benefit quartile.

- Staff continuity was considerably higher at facilities with more generous benefits. Only 31 percent of direct nursing staff at facilities in the lowest quartile were employed during the entire year, compared to 36 percent at facilities in the third quartile and 38 percent at facilities in the highest quartile.

- Among nurse aides, 19 percent who worked at facilities in the lowest quartile were employed for the entire year, compared to 22 percent for the second quartile, 23 percent for the third quartile, and 25 percent for facilities at the highest benefit quartile.

Turnover rates were also lower for Kansas facilities that had a higher proportion of total expenditures related to employee benefits:

- Among all nursing staff, average turnover was 94 percent for facilities in the lowest benefit quartile, 91 percent for those in the second quartile, 79 percent for the third quartile, and 76 percent for facilities in the highest quartile (Table 4.9).

- Among individual types of nursing staff, benefit levels appeared to have the strongest relationship to turnover among nurse aides. Average turnover for nurse aides was 107 percent for facilities in the lowest benefit quartile and 104 percent for facilities in the second quartile. Turnover was considerably lower for facilities in either of the two highest benefit quartiles — 88 percent for the third quartile and 93 percent for the fourth quartile. Turnover rates for RNs and LPNs were also lower for facilities in the highest benefit quartile than for facilities in the lowest quartile.

Table 4.6
Turnover and Staff Continuity By Wage Quartile: California

	Wage Quartile			
	1-25th	26-50th	51-75th	76th-99th
Employee turnover percentage				
Direct nursing employees	72.5%	75.6%	70.5%	69.9%
Nurse aide	83.8%	79.3%	74.3%	73.1%
Percentage of employees with continuous service throughout the year				
Direct nursing employees	31.5%	33.9%	38.1%	37.4%
Nurse aide	21.0%	23.5%	24.6%	23.4%

Notes: N=1,139

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.7
Turnover Rates by Wage Quartile: Kansas

	Wage Quartile			
	1-25th	26-50th	51-75th	76th-99th
Employee turnover percentage				
RN	55.1%	46.7%	51.3%	63.5%
LPN	55.2%	52.9%	60.3%	63.4%
Nurse aide	96.4%	106.1%	84.9%	107.2%

Notes: N=252

Sources: KansasDepartment of Aging, Medicaid Cost Report Data, 1999

Table 4.8
Turnover and Staff Continuity By Benefit Quartile: California

	Benefit Quartile			
	1-25th	26-50th	51-75th	76th-99th
Employee turnover percentage				
Direct nursing employees	83.6%	73.3%	71.2%	63.1%
Nurse aide	89.4%	79.9%	76.8%	66.8%
Percentage of employees with continuous service throughout the year				
Direct nursing employees	31.1%	35.4%	36.4%	38.3%
Nurse aide	19.1%	22.8%	23.4%	25.1%

Notes: N=1,139

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.9
Turnover Rates by Benefit Quartile: Kansas

	Benefit Quartile			
	1-25th	26-50th	51-75th	76th-99th
Employee turnover percentage				
All nursing staff	93.9%	90.8%	78.5%	75.8%
RN	55.7%	52.1%	56.9%	52.2%
LPN	62.4%	51.3%	63.8%	58.9%
Nurse aide	106.9%	104.2%	88.4%	92.6%

Notes: N=252

Sources: KansasDepartment of Aging, Medicaid Cost Report Data, 1999

4.6.5 Variation in Turnover Rates Within Cities

There was a great deal of variation in turnover rates for facilities within the same city, suggesting that local labor market conditions or other area-specific factors are not as important as facility-specific factors in accounting for differences in turnover rates. Tables 4.10 – 4.15 show turnover rates by city, for cities with a minimum number of nursing facilities in each of the three states. Note that although these tables report statistics aggregated to the city level, we also analyzed the distribution of turnover rates at the zip code level to select facilities for the site visits described in Chapter 5.18 This analysis indicated that there was also considerable variation in turnover at the zip code level, providing further evidence that local labor market conditions cannot explain facility differences in turnover levels.

California

- In Long Beach California, one of two California cities that was visited to explore the reasons for facility differences in turnover rates (see Chapter 5), the average turnover rate for direct nursing staff was 88 percent (Table 4.10). Turnover rates for facilities in the city ranged from 24 percent to 168 percent, and the inter-quartile range was 54 to 109 percent.

- In Fresno, the other California city that was visited as part of our site visits, turnover was lower than for Long Beach, but direct nursing turnover ranged from 30 percent to 124 percent.

- In all but 4 of the California cities with 8 or more facilities, one or more facilities had a turnover rate of 100 percent or higher. In all but four cities, at least one facility had a turnover rate of 35 percent or less.

18 Chapter 5 reports the results of site visits to high and low turnover facilities within particular labor markets, addressing the role of facility leadership, management practices, and other facility-specific factors in explaining facility differences in turnover within particular labor markets.

- In the majority of California cities, the top quartile of facilities had nurse aide turnover of 100 percent or higher (Table 4.11). For many of these cities, nurse aide turnover for the lowest quartile of facilities was 50 percent or less.

- Similar variation was found in the staff retention measure. For example, in San Francisco, 25 percent of nursing homes had direct nursing staff retention of 18 percent or less, while 25 percent had retention of at least 51 percent (Table 4. 12). Two facilities in San Francisco had staff retention of more than 70 percent. In San Francisco, retention for nurse aides was 11 percent or less for the lowest quartile of facilities, compared to 36 percent of more for the highest quartile (Table 4.13).

- For most California cities, at least one facility had nurse aide retention of 40 percent or more. Bakersfield, however, was the only city for which at least one nursing home did not have nursing home retention of 12 percent or less. Also, for most cities, the lowest quartile of facilities had nurse aide retention of less than 15 percent.

Kansas

- There were few cities in Kansas that had four or more nursing homes, but there was considerable variance in reported turnover levels in these cities. In Olathe, the Kansas town that was visited as part of our site visits, overall turnover (across RNs, LPNs, and nurse aides) ranged from 26 to 157 percent (Table 4.14). Similar variation was found in other Kansas cities.

- For all of the cities in Kansas that are examined on Table 4.14, at least 25 percent of facilities reported overall turnover of more than 100 percent. For most cities, the lowest quartile of facilities reported turnover of 65 percent or less.

- Average turnover levels were considerably higher in Topeka and Wichita than in other towns.

Wisconsin

- Similar to California and Kansas, there was considerable variation in turnover levels within cities. In Milwaukee, the Wisconsin city that was visited as part of the site visits, overall reported turnover was 48 percent or less for the lowest quartile of facilities and 106 percent or more for the highest quartile (Table 4.15).

- Only three of the Wisconsin MSAs that we examined did not have one or more facility with overall turnover of 100 percent or more. All of the MSAs had at least one facility with overall turnover of 45 percent or less.

Table 4.10:

Direct Nursing Turnover Statistics for California Cities

City	Number	Average Turnover	Minimum	Percentile					Maximum
				10th	25th	50TH	75TH	90TH	
ANAHEIM	14	81.5	22	31	52	79	107	131	150
BAKERSFIELD	9	62.6	39	39	52	59	77	87	87
CARMICHAEL	9	62.9	18	18	33	54	93	118	118
EL CAJON	13	81.0	41	44	57	73	110	139	143
EL MONTE	10	69.0	34	34	45	64	82	149	155
ESCONDIDO	8	61.8	18	18	39	56	92	109	109
FRESNO	22	67.7	30	36	48	67	87	94	124
GLENDALE	14	45.5	15	18	24	37	73	79	80
HAYWARD	14	65.0	23	25	34	51	77	158	169
LA MESA	8	84.9	32	32	50	79	125	131	131
LONG BEACH	26	87.7	24	44	54	78	109	168	183
LOS ANGELES	74	64.3	8	25	38	60	86	112	138
MODESTO	11	84.5	44	48	63	80	112	118	119
NORTH HOLLYWOOD	8	50.3	15	15	38	49	67	86	86
OAKLAND	20	85.0	34	36	51	75	114	152	200
PASADENA	16	79.2	14	26	43	76	103	158	176
POMONA	10	77.0	40	41	47	55	108	174	179
RIVERSIDE	17	93.1	29	39	47	78	126	204	220
SACRAMENTO	24	87.2	25	30	49	76	107	176	208
SAN BERNARDINO	10	90.2	38	38	56	81	130	153	153
SAN DIEGO	24	60.5	26	27	34	55	85	106	110
SAN FRANCISCO	19	56.6	13	24	33	49	81	96	106
SAN JOSE	19	74.3	26	26	41	74	100	132	161
SAN RAFAEL	9	71.3	18	18	47	80	95	126	126
SANTA ANA	9	50.7	27	27	29	52	65	89	89
SANTA BARBARA	9	70.2	15	15	45	74	96	115	115
SANTA MONICA	11	53.0	18	22	37	55	62	97	103
STOCKTON	15	52.9	17	21	32	43	59	118	197
TORRANCE	10	69.0	35	35	39	54	83	161	165

Notes: Table 4.10 includes statistics for cities with eight or more nursing homes.

Source: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.11:

Nurse Aide Turnover Statistics for California Cities

City	Number	Average Turnover	Minimum	Percentile					Maximum
				10th	25th	50TH	75TH	90TH	
ANAHEIM	14	84.5	10	24	61	85	107	139	156
BAKERSFIELD	9	58.2	29	29	43	53	79	81	81
CARMICHAEL	9	72.0	20	20	41	56	114	145	145
EL CAJON	13	95.5	37	42	51	70	136	206	210
EL MONTE	10	70.1	37	37	38	67	94	126	129
ESCONDIDO	8	68.8	31	31	43	56	79	163	163
FRESNO	23	65.4	22	30	45	64	89	104	110
GLENDALE	14	52.1	17	22	31	47	79	92	93
HAYWARD	14	73.1	27	27	30	53	111	166	192
LA MESA	8	90.1	36	36	49	75	145	152	152
LONG BEACH	26	91.3	29	37	58	80	120	164	193
LOS ANGELES	74	71.8	10	25	40	63	100	135	193
MODESTO	11	97.4	61	61	71	95	121	133	134
NORTH HOLLYWOOD	8	55.6	18	18	34	58	76	87	87
OAKLAND	21	106.2	19	39	66	91	140	190	279
PASADENA	16	87.6	15	28	45	78	100	193	219
POMONA	10	79.3	25	26	43	55	109	195	196
RIVERSIDE	17	112.1	43	44	49	94	156	236	276
SACRAMENTO	24	90.1	21	31	50	74	124	189	235
SAN BERNARDINO	10	93.5	38	38	49	97	134	164	167
SAN DIEGO	24	65.8	21	28	38	65	92	113	122
SAN FRANCISCO	19	56.7	12	16	32	57	79	92	100
SAN JOSE	19	80.3	18	22	49	69	106	171	215
SAN RAFAEL	9	71.7	22	22	38	69	108	124	124
SANTA ANA	9	53.0	18	18	35	46	79	91	91
SANTA BARBARA	9	60.1	14	14	41	46	82	131	131
SANTA MONICA	11	61.4	31	31	35	60	85	112	114
STOCKTON	15	53.6	5	19	29	44	65	119	196
TORRANCE	10	91.4	31	32	52	74	134	203	210

Notes: Table 4.11 includes statistics for cities with eight or more nursing homes.

Source: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.12:

Direct Nursing Staff Continuity Statistics for California Cities

City	Number	Average Turnover	Minimum	Percentile					Maximum
				10th	25th	50TH	75TH	90TH	
ANAHEIM	14	36.1	14	17	21	38	48	60	65
BAKERSFIELD	9	52.3	26	26	42	52	65	68	68
CARMICHAEL	9	39.1	9	9	19	38	50	93	93
EL CAJON	13	34.0	12	14	17	24	42	89	95
EL MONTE	10	29.1	20	20	21	24	34	55	56
ESCONDIDO	8	33.0	13	13	14	25	43	88	88
FRESNO	22	37.0	9	13	21	34	49	66	91
GLENDALE	14	32.3	12	14	20	25	44	69	75
HAYWARD	14	31.9	12	14	19	31	43	55	56
LA MESA	8	33.3	8	8	22	31	46	61	61
LONG BEACH	26	32.3	3	17	22	31	42	52	66
LOS ANGELES	72	34.8	13	17	23	31	41	63	91
MODESTO	10	40.5	15	15	21	39	59	75	76
NORTH HOLLYWOOD	8	37.5	13	13	15	28	59	97	97
OAKLAND	20	27.5	6	10	17	25	37	52	64
PASADENA	16	27.8	15	16	22	27	34	43	44
POMONA	10	35.6	14	14	21	34	42	77	80
RIVERSIDE	17	29.8	10	10	16	29	36	60	67
SACRAMENTO	24	34.6	10	13	19	27	47	72	82
SAN BERNARDINO	10	29.5	17	17	21	31	37	40	40
SAN DIEGO	22	35.8	10	14	23	30	47	63	81
SAN FRANCISCO	20	34.5	14	14	18	29	51	71	72
SAN JOSE	19	41.5	10	11	20	35	54	93	96
SAN RAFAEL	9	38.9	19	19	28	29	47	97	97
SANTA ANA	8	42.4	4	4	25	44	62	75	75
SANTA BARBARA	9	37.0	10	10	23	36	50	66	66
SANTA MONICA	11	23.8	8	9	17	19	24	69	79
STOCKTON	15	49.1	12	20	36	50	57	84	97
TORRANCE	10	44.1	18	19	26	33	70	71	71

Notes: Table 4.12 includes statistics for cities with eight or more nursing homes.

Source: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.13:

Nurse Aide Continuity Statistics for California Cities

City	Number	Average Turnover	Minimum	Percentile					Maximum
				10th	25th	50TH	75TH	90TH	
ANAHEIM	14	22.1	9	9	12	23	31	38	38
BAKERSFIELD	9	36.3	18	18	30	41	43	43	43
CARMICHAEL	9	24.3	6	6	17	23	29	53	53
EL CAJON	13	19.3	5	6	10	16	24	49	55
EL MONTE	10	17.7	12	12	15	16	18	34	35
ESCONDIDO	8	20.9	6	6	10	14	28	60	60
FRESNO	23	24.4	6	6	13	22	34	45	56
GLENDALE	14	21.7	9	10	13	17	31	48	59
HAYWARD	14	19.6	7	7	11	19	28	35	38
LA MESA	8	20.4	6	6	13	18	28	43	43
LONG BEACH	26	20.1	2	11	14	19	26	31	49
LOS ANGELES	72	23.0	6	10	14	21	30	38	60
MODESTO	10	26.0	10	10	12	25	40	47	47
NORTH HOLLYWOOD	8	20.1	7	7	10	19	29	40	40
OAKLAND	21	16.9	2	5	9	15	24	32	43
PASADENA	16	18.8	10	11	13	19	25	27	29
POMONA	10	20.5	7	7	14	18	26	44	45
RIVERSIDE	17	18.1	5	6	11	18	23	34	37
SACRAMENTO	24	22.5	6	9	12	19	29	48	58
SAN BERNARDINO	10	18.8	10	10	12	19	26	27	27
SAN DIEGO	22	22.4	5	5	13	18	32	42	56
SAN FRANCISCO	20	22.6	8	9	11	17	36	48	49
SAN JOSE	19	25.9	7	8	14	21	34	59	63
SAN RAFAEL	9	25.7	11	11	16	19	31	66	66
SANTA ANA	8	28.4	8	8	16	30	42	49	49
SANTA BARBARA	9	24.8	5	5	17	24	33	45	45
SANTA MONICA	11	15.1	7	7	10	11	15	46	53
STOCKTON	15	32.4	9	12	24	30	39	57	71
TORRANCE	10	27.2	11	12	19	24	36	50	51

Notes: Table 4.13 includes statistics for cities with eight or more nursing homes.

Source: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.14:
Turnover Statistics for Kansas Cities

City	Number	Average Turnover	Minimum	Percentile 25th	50th	75th	Maximum
Emporia	4	94.8	48	54	78	152	174
Hutchinson	5	82.9	55	58	64	117	162
Manhattan	4	105.7	54	62	109	147	152
Newton	4	84.7	62	65	82	107	113
Olathe	5	105.1	26	61	98	153	157
Overland Park	7	81.1	50	59	71	107	118
Parsons	4	94.9	32	44	95	146	158
Salina	6	123.2	22	40	118	186	280
Topeka	21	121.8	10	80	110	169	275
Wichita	11	135.8	56	110	141	175	197

Notes: Table 4.14 includes statistics for cities with four or more nursing homes. Average turnover is calculated across RNs, LPNs, and nurse aides.

Sources: Kansas Department of Aging, Medicaid Cost Report Data, 1999

Table 4.15:
Turnover Statistics for Wisconsin Cities

City	Number	Average Turnover	Minimum	Percentile 25th	50th	75th	Maximum
APPLETON	7	62.2	24	25	58	84	134
FOND DU LAC	8	66.4	45	49	59	88	106
GREEN BAY	14	66.9	25	53	60	87	109
JANESVILLE	5	42.9	24	25	35	64	72
KENOSHA	8	91.6	31	79	90	118	125
LA CROSSE	5	49.3	24	34	55	62	63
MADISON	11	108.1	36	69	108	136	232
MANITOWOC	7	52.0	7	28	35	79	135
MILWAUKEE	43	80.2	12	48	70	106	228
RACINE	7	55.4	23	43	47	73	91
SHEBOYGAN	6	78.5	26	33	73	118	159
SUPERIOR	5	62.1	22	29	37	108	114
WAUKESHA	5	82.8	42	42	103	113	115
WEST ALLIS	6	89.4	40	57	85	128	139

Notes: Table 4.15 includes statistics for cities with five or more nursing homes. Average turnover is calculated across RNs, LPNs, and nurse aides.

Source: Wisconsin Division of Health Care Financing, Bureau of Health Information, Annual Survey of Nursing Home, 1999

4.6.6 Regression Results

We estimated a series of multivariate regression models to estimate the relationship between turnover and staff retention (for California, the only state for which staff retention data were available) and facility characteristics, wage, benefit and staffing levels, and local labor market characteristics. Because of differences across states in how turnover was calculated, the data sources for turnover, and the available independent variables, we estimated separate models for each state. Also, because of a relatively low match rate of the facility workload variable to the California cost report data that was used to create the other independent variables, we estimated two series of regressions for California—one that excluded the workload variable and a second set of models that included the facility workload variable but excluded the facilities for which we were not able to match the workload score. For California, we were also able to analyze staff retention in addition to turnover. For these models, retention was defined as the proportion of staff employed at the facility throughout the entire period covered by the cost report.

1.1.2. California:

Wage and benefit levels

Benefits were significantly related to turnover. Evidence was mixed regarding the impact of wage rates on turnover. Among all direct nursing staff, wage rates19 were not significantly related to turnover (Table 4.16). This may be because the average wage rate figure used in these models reflects a combination of the staffing mix at the facility and actual hourly wage rates (e.g., facilities that have a higher proportion of more highly paid RNs will tend to have a higher overall wage rate even if the actual hourly wage rate paid to staff are not any higher).

Among nurse aides, turnover was significantly lower at facilities with higher nurse aide wage rates, although the magnitude of the estimated impact was small. Relative to facilities in the lowest wage rate quartile, turnover was more than 10 percent lower for facilities in the third quartile and 19 percent lower for facilities in the highest quartile (Table 4.17). Both of these differences were statistically significant at the 1 percent level.

For both direct nursing staff and nurse aides, there was a strong and statistically significant relationship between benefit levels and turnover. Average turnover across all direct nursing care staff was 18 percent lower at facilities in the top quartile in terms of benefit levels than at facilities in the lowest benefit quartile (Table 4.16). Turnover was 11 percent lower for facilities in the third highest benefit quartile and 9 percent lower for facilities in the second highest quartile. All of these differences were statistically significant at the 1 percent level.

19 Note that all wage rate figures used in the regression models are adjusted for differences in cost of living across different parts of the state as described in Section 4.

A similar relationship was observed for the subset of nurse aides. Average turnover for facilities in the top quartile in terms of benefit levels was 18 percent lower than for facilities in the lowest quartile (Table 4.17). Turnover was also significantly lower for facilities in the second or third quartiles than for facilities in the lowest quartile.

Facilities with high turnover tended to have low staff retention, although there were exceptions. As a result, regression results for the staff retention measures were in general consistent with those for the turnover models. Facilities that paid higher wage rates had higher staff retention than other facilities. Among direct nursing staff, retention was about 3 percentage points higher than for facilities in the lowest wage quartile, a difference that was statistically significant at the 5 percent level (Table 4.18). For nurse aides, retention was significantly higher among facilities with above average wage rates. Relative to facilities in the lowest nurse aide wage rate quartile, retention was 1.5 percentage points higher for facilities in the third quartile and more than 2 points higher for facilities in the highest quartile (Table 4.19).

Consistent with results from the turnover models, we found a strong relationship between retention and facility benefit expenditures. For direct nursing staff, compared to facilities in the lowest benefit quartile, retention was 4.4 percent higher among facilities in the second quartile, 5.6 percent higher for those in the third quartile, and 7 percent higher for facilities in the highest quartile (Table 4.19). A similar pattern was observed for the subset of nurse aides—nurse aide retention was significantly higher at facilities with higher benefit expenditures.

Staffing levels

Across all direct care staff, there was no relationship between total nursing hours per resident day and turnover. Among nurse aides, turnover was lower at facilities that had more nurse aide hours per resident day. A one hour change in nurse aides per resident day was associated with a 4 percent decrease in turnover, a difference that was statistically significant at the 10 percent level (Table 4.17). Similarly, while there was no relationship between facility staffing levels and retention among direct nursing staff, nurse aide retention was significantly higher at facilities with more nurse aide staffing. A one hour change in nurse aides per resident day was associated with a 1 percent increase in retention (Table 4.19).

Facility characteristics

Among both all direct nursing care staff and the subset of nurse aides, turnover was significantly higher at for profit facilities, other factors held constant. Among both direct nursing care staff and the subset of nurse aides, turnover was more than 16 percent higher at for-profit facilities. There was no difference in turnover rates between nursing home chains and independent facilities.

Turnover was significantly lower at large nursing facilities. Among direct nursing care staff, the turnover percentage was 15 percent lower at facilities with 200 or more beds, relative to facilities with less than 100 beds (Table 4.16). It was 11 percent lower at facilities with between 100 and 199 beds. Both of these differences were statistically significant at the 1 percent level. A similar pattern was observed for nurse aides—turnover was 17 percent lower at facilities with 200 or more beds and nearly 10 percent lower for facilities with between 100 and 199 beds, relative to smaller nursing homes with less than 100 beds (Table 4.17).

Retention for both all direct nursing staff and the subset of nurse aides was much higher at larger facilities. Adjusting for the other variables in the model, direct nursing retention was 24 percent higher at facilities with 100-199 beds and 40 percent higher at facilities with more than 200 beds than at facilities with fewer than 100 beds (Table 4.18). Among nurse aides, compared to facilities with fewer than 100 beds, retention was 15 percent higher at facilities with 100-199 beds and 31 percent higher at facilities with 200 or more beds (Table 4.19). These differences were statistically significant at the1 percent level.

Facility size was by far the best predictor of facility retention rates. Because of the strong relationship between facility size and retention, the statistical performance of the retention models was superior to that of the California turnover models. Our models accounted for more than 45 percent of the variance in retention rates, compared to less than 10 percent of the variance in turnover for either direct nursing staff or nurse aides.

Local labor market characteristics

Among direct nursing care staff, there was no difference in turnover rates between facilities in urban counties, rural counties, and counties that are adjacent to urban areas. Nurse aide turnover was significantly (at the 10 percent level) higher for urban facilities, relative to rural facilities, perhaps reflecting the larger number of nursing homes that are found in urban counties.

There was no relationship between county unemployment rates and turnover or retention, either for all direct nursing care staff or the subset of nurse aides. Turnover rates, however, were higher for facilities in counties with higher per capita income. Relative to counties in the lowest quartile in terms of per capita income, turnover among nurse aides was 35 percent higher in counties in any of the three highest quartiles. All of these differences were statistically significant at the five percent level or higher. This relationship likely reflects the greater potential access to higher paying jobs in counties with higher per capita income levels. Consistent with this hypothesis, direct nursing staff retention was significantly lower for facilities in counties with higher per capita income levels. Relative to counties in the lowest quartile, retention was almost 11 percent lower in counties in the third quartile and nearly 8 percent lower for counties in the highest per capita income quartile (Table 4.18). These differences were statistically significant.

Table 4.16:
California Regression Models: Turnover Percentage, Direct Nursing Care Staff, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	52.31 ***	11.50	4.55
Total nursing hours per resident day	1.49	1.25	1.19
100 or more beds	-10.91 ***	2.55	-4.28
200 or more beds	-15.40 ***	5.43	-2.84
Average wage rate: Second quartile	2.60	3.10	0.84
Average wage rate: Third quartile	-1.81	3.27	-0.56
Average wage rate: Top quartile	-5.80	3.90	-1.49
Fringe benefit percentage: Second quartile	-9.19 ***	3.11	-2.96
Fringe benefit percentage: Third quartile	-10.93 ***	3.22	-3.40
Fringe benefit percentage: Top quartile	-17.78 ***	3.36	-5.29
For-profit facility	16.56 ***	3.57	4.64
Chain facility	-0.37	2.65	-0.14
Urban county	2.64	5.93	0.45
Adjacent to urban county	6.27	7.94	0.79
County unemployment rate: Second quartile	-4.20	5.06	-0.83
County unemployment rate: Third quartile	4.26	10.98	0.39
County unemployment rate: Top quartile	-30.96	22.07	-1.40
Per capita income: Second quartile	18.82 *	10.15	1.86
Per capita income: Third quartile	17.98	14.28	1.26
Per capita income: Top quartile	19.57	11.89	1.65

Notes: N= 1,157 R-squared: 0.096

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.17:
California Regression Models: Turnover Percentage, Nurse Aides, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	63.83 ***	13.87	4.60
Nurse aide hours per resident day	-4.25 *	2.48	-1.72
100 or more beds	-9.78 ***	3.00	-3.26
200 or more beds	-17.01 ***	6.47	-2.63
Nurse aide wage: Second quartile	-3.31	3.70	-0.89
Nurse aide wage: Third quartile	-10.52 ***	4.06	-2.59
Nurse aide wage: Top quartile	-18.56 ***	4.87	-3.82
Fringe benefit percentage: Second quartile	-9.09 **	3.66	-2.49
Fringe benefit percentage: Third quartile	-10.31 ***	3.84	-2.69
Fringe benefit percentage: Top quartile	-18.32 ***	4.00	-4.58
For-profit facility	15.90 ***	4.27	3.72
Chain facility	-4.14	3.13	-1.32
Urban county	12.32 *	7.00	1.76
Adjacent to urban county	9.35	9.42	0.99
County unemployment rate: Second quartile	-7.02	6.02	-1.17
County unemployment rate: Third quartile	8.39	13.00	0.65
County unemployment rate: Top quartile	-32.52	26.36	-1.23
Per capita income: Second quartile	34.87 ***	12.10	2.88
Per capita income: Third quartile	35.04 **	17.16	2.04
Per capita income: Top quartile	34.63 **	14.27	2.43

Notes: N= 1,129 R-squared: 0.484

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.18:
California Regression Models: Staff Retention Percentage, Direct Nursing Care Staff, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	26.82 ***	4.18	6.41
Total nursing hours per resident day	0.46	0.46	1.01
100 or more beds	24.11 ***	0.93	25.98
200 or more beds	40.52 ***	2.28	17.74
Average wage rate: Second quartile	0.12	1.13	0.10
Average wage rate: Third quartile	1.48	1.19	1.25
Average wage rate: Top quartile	3.29 **	1.42	2.31
Fringe benefit percentage: Second quartile	4.45 ***	1.13	3.94
Fringe benefit percentage: Third quartile	5.63 ***	1.18	4.79
Fringe benefit percentage: Top quartile	7.05 ***	1.22	5.78
For-profit facility	-0.95	1.31	-0.72
Chain facility	-0.01	0.97	-0.01
Urban county	0.46	2.15	0.22
Adjacent to urban county	1.98	2.89	0.69
County unemployment rate: Second quartile	2.33	1.84	1.27
County unemployment rate: Third quartile	-4.73	3.99	-1.19
County unemployment rate: Top quartile	-1.60	8.00	-0.20
Per capita income: Second quartile	-5.46	3.69	-1.48
Per capita income: Third quartile	10.81	5.20	-2.08
Per capita income: Top quartile	-7.88	4.32	-1.82

Notes: N= 1,129 R-squared: 0.484

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.19:
California Regression Models: Staff Retention Percentage, Nurse Aides, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	13.24 ***	3.10	4.27
Nurse aide hours per resident day	1.18 **	0.55	2.13
100 or more beds	15.77 ***	0.67	23.58
200 or more beds	31.25 ***	1.51	20.72
Nurse aide wage: Second quartile	1.35	0.83	1.63
Nurse aide wage: Third quartile	1.53 *	0.91	1.68
Nurse aide wage: Top quartile	2.17 **	1.09	1.99
Fringe benefit percentage: Second quartile	2.65 ***	0.82	3.24
Fringe benefit percentage: Third quartile	3.94 ***	0.86	4.59
Fringe benefit percentage: Top quartile	5.13 ***	0.90	5.73
For-profit facility	0.33	0.96	0.34
Chain facility	0.15	0.70	0.22
Urban county	-0.01	1.57	-0.01
Adjacent to urban county	0.02	2.11	0.01
County unemployment rate: Second quartile	1.37	1.35	1.02
County unemployment rate: Third quartile	-1.74	2.90	-0.60
County unemployment rate: Top quartile	-0.42	5.89	-0.07
Per capita income: Second quartile	-2.60	2.70	-0.96
Per capita income: Third quartile	-5.28	3.84	-1.38
Per capita income: Top quartile	-4.06	3.19	-1.27

Notes: N= 1,155 R-squared: 0.464

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Facility Case Mix (Workload)

There was no relationship between facility case mix and turnover and retention for either all direct nursing staff or the subset of nurse aides (see Tables 4.20 – 4.24). This may be due to measurement error in both the MDS (used to calculate the workload score) and facility turnover statistics. It may also be because the facility workload score is poorly correlated with the amount or difficulty of work required from nurses. In any case, we were not able to detect any relationship between case mix and turnover, even for models (not reported) that excluded the independent variables related to staffing level. (since staffing levels tended to be somewhat higher for facilities that had higher workload scores). The California regression results do not support the hypothesis that facility case mix is related to turnover and retention, at least not after adjusting for facility staffing levels and the other independent variables included in the models.

Table 4.20:
California Regression Models: Turnover Percentage, Direct Nursing Care Staff, with Facility Workload, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	48.08 ***	16.12	2.98
Total nursing hours per resident day	0.22	1.93	0.11
100 or more beds	-11.68 ***	3.11	-3.76
200 or more beds	-13.08 **	6.19	-2.11
Average wage rate: Second quartile	0.80	3.74	0.21
Average wage rate: Third quartile	-3.50	4.04	-0.87
Average wage rate: Top quartile	-5.53	4.90	-1.13
Fringe benefit percentage: Second quartile	-9.44 **	3.72	-2.54
Fringe benefit percentage: Third quartile	-11.95 ***	3.85	-3.10
Fringe benefit percentage: Top quartile	-17.41 ***	4.12	-4.22
For-profit facility	17.83 ***	4.43	4.03
Chain facility	0.78	3.29	0.24
Urban county	3.18	7.58	0.42
Adjacent to urban county	11.77	9.88	1.19
County unemployment rate: Second quartile	-2.78	6.73	-0.41
County unemployment rate: Third quartile	5.97	13.69	0.44
County unemployment rate: Top quartile	-47.13	37.76	-1.25
Per capita income: Second quartile	24.49 **	12.49	1.96
Per capita income: Third quartile	19.71	17.45	1.13
Per capita income: Top quartile	25.37 *	14.86	1.71
Average facility workload	2.07	3.46	0.60

Notes: N= 780 R-squared: 0.109

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.21:
California Regression Models: Turnover Percentage, Nurse Aides, with Facility Workload, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	54.45 ***	19.21	2.84
Nurse aide hours per resident day	-2.63	4.00	-0.66
100 or more beds	-11.05 ***	3.55	-3.11
200 or more beds	-15.99 **	7.21	-2.22
Nurse aide wage: Second quartile	-7.14	4.38	-1.63
Nurse aide wage: Third quartile	-10.50 **	4.91	-2.14
Nurse aide wage: Top quartile	-15.81 ***	5.95	-2.66
Fringe benefit percentage: Second quartile	-13.86 **	4.29	-3.23
Fringe benefit percentage: Third quartile	-13.53 ***	4.50	-3.01
Fringe benefit percentage: Top quartile	-19.47 ***	4.82	-4.04
For-profit facility	17.51 ***	5.20	3.37
Chain facility	-1.59	3.84	-0.41
Urban county	13.05	8.74	1.49
Adjacent to urban county	16.71	11.46	1.46
County unemployment rate: Second quartile	-3.43	7.82	-0.44
County unemployment rate: Third quartile	6.06	15.85	0.38
County unemployment rate: Top quartile	-35.36	44.10	-0.80
Per capita income: Second quartile	36.22 **	14.64	2.48
Per capita income: Third quartile	29.80	20.67	1.44
Per capita income: Top quartile	35.54 **	17.51	2.03
Average facility workload	3.24	3.99	0.81

Notes: N= 792 R-squared: 0.0106

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.22:
California Regression Models: Staff Retention Percentage, Direct Nursing Care Staff, with Facility Workload, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	16.25 ***	5.81	2.80
Total nursing hours per resident day	2.89 ***	0.70	4.14
100 or more beds	22.63 ***	1.12	20.23
200 or more beds	40.00 ***	2.55	15.68
Average wage rate: Second quartile	1.13	1.35	0.84
Average wage rate: Third quartile	2.36	1.45	1.62
Average wage rate: Top quartile	4.59 ***	1.77	2.59
Fringe benefit percentage: Second quartile	3.74 ***	1.34	2.80
Fringe benefit percentage: Third quartile	5.31 ***	1.39	3.81
Fringe benefit percentage: Top quartile	5.75 ***	1.49	3.87
For-profit facility	0.95	1.61	0.59
Chain facility	-1.71	1.19	-1.43
Urban county	0.74	2.72	0.27
Adjacent to urban county	2.24	3.55	0.63
County unemployment rate: Second quartile	0.41	2.41	0.17
County unemployment rate: Third quartile	-3.23	4.91	-0.66
County unemployment rate: Top quartile	11.58	13.51	-0.86
Per capita income: Second quartile	-3.43	4.49	-0.76
Per capita income: Third quartile	-8.30	6.30	-1.32
Per capita income: Top quartile	-5.92	5.34	-1.11
Average facility workload	1.04	1.26	0.83

Notes: N= 768 R-squared: 0.482

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

Table 4.23:
California Regression Models: Staff Retention Percentage, Nurse Aides, with Facility Workload, 1999

Variable	Parameter Estimate	Standard Error	T statistic
Intercept	6.23	4.34	1.44
Nurse aide hours per resident day	3.58 ***	0.90	3.97
100 or more beds	14.94 ***	0.80	18.67
200 or more beds	31.44 ***	1.69	18.59
Nurse aide wage: Second quartile	0.91	0.99	0.92
Nurse aide wage: Third quartile	2.70 **	1.11	2.44
Nurse aide wage: Top quartile	2.32 *	1.34	1.73
Fringe benefit percentage: Second quartile	2.19 **	0.97	2.27
Fringe benefit percentage: Third quartile	4.09 ***	1.02	4.02
Fringe benefit percentage: Top quartile	4.56 ***	1.09	4.18
For-profit facility	2.27 *	1.18	1.93
Chain facility	-1.03	0.86	-1.19
Urban county	0.54	1.97	0.27
Adjacent to urban county	0.89	2.58	0.35
County unemployment rate: Second quartile	-0.50	1.76	-0.29
County unemployment rate: Third quartile	-0.85	3.57	-0.24
County unemployment rate: Top quartile	11.15	9.93	-1.12
Per capita income: Second quartile	-1.12	3.30	-0.34
Per capita income: Third quartile	-3.64	4.66	-0.78
Per capita income: Top quartile	-2.69	3.95	-0.68
Average facility workload	0.25	0.91	0.27

Notes: N= 789 R-squared: 0.471

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: State of California, Office of Statewide Health Planning and Development , Long-Term Care Facility Annual Financial Data, 1999

1.1.3. Kansas

Similar to the California models, the statistical performance of the Kansas regression models was rather modest— the models accounted for 27 percent of the variance in overall nursing staff turnover. The models performed better in accounting for variance in nurse aide turnover than turnover for RNs or LPNs.

Wage and Benefit Levels

There was no relationship between hourly wage rates and turnover, either overall (Table 4.24) or separately for RNs (Table 4.25), LPNs (Table 4.26), or nurse aides (Table 4.27). Benefit levels, however, were strongly related to turnover. Among all staff, turnover for

facilities in the third benefit quartile was 23 percent lower than for facilities in the lowest quartile; turnover for the highest quartile was 18 percent lower (Table 4.24). This relationship was due to the sensitivity of nurse aide turnover to benefit levels. Turnover for facilities in the third highest benefit quartile had nurse aide turnover that was 24 percent lower than facilities in the lowest benefit quartile (Table 4.27). For RNs and LPNs, the relationship between benefit levels and turnover was not statistically significant.

Staffing Levels

Contrary to our expectation, there was no indication that turnover at facilities with high staffing levels was lower than turnover at lower staffed facilities. There was no significant relationship between overall staffing levels and turnover for any nurse category. For RNs, turnover was significantly lower at facilities with lower levels of RN staffing (Table 4.25). LPN turnover was significantly lower at facilities with more LPN hours per resident day, but was not significantly related to total nursing hours (Table 4.26). Among nurse aides, there was no relationship between total nursing hours per resident day and turnover (Table 4.27).

Facility Characteristics

Turnover was significantly lower at hospital based facilities, particularly for nurse aides. Nurse aide turnover was 46 percent lower at the state's hospital based facilities, other factors held constant (Table 4.27). Overall turnover was 41 percent lower at hospital-based facilities than at freestanding ones (Table 4.24). Across all nursing staff, turnover was also 29 percent higher at for-profit facilities relative to non-profit facilities, a statistically significant difference. There was no significant difference in turnover rates between chain-affiliated and independent facilities. Facility size was also not related to turnover rates for Kansas facilities—turnover rates were essentially the same at facilities with fewer than 100 beds than at larger facilities.

Local Labor Market Characteristics

There was no difference in turnover rates between urban, adjacent, or rural facilities for RNs, LPNs, or nurse aides, nor were county unemployment rates significantly related to turnover. Across all nursing staff, turnover was significantly higher (at the 5 percent level) for facilities in counties in the top quartile in terms of average per capita income relative to counties in the lowest quartile (Table 4.24). This was particularly true for LPNs—turnover at facilities in counties in the top per capita income quartile was 41 percent lower than for facilities in the lowest quartile, and this relationship was statistically significant at the 1 percent level (Table 4.26).

Facility Case Mix (Workload)

Across all facility staff, turnover was significantly higher at facilities with a higher case mix, based on the facility workload score. Given the standard deviation of the workload variable

for Kansas facilities (0.5), a one standard deviation increase in the workload variable was associated with an 8 percent increase in facility turnover, other factors held constant (Table 4.24). This overall relationship was due to the strong relationship between workload and nurse aide turnover. Among nurse aides, each one standard deviation increase in facility workload was associated with a 10 percent increase in turnover, and this relationship was statistically significant at the 5 percent level. There was no relationship between facility workload and turnover for RNs or LPNs.

Table 4.24
Regression Results: Turnover Percentage, All Nursing Staff: Kansas

Variable	Parameter Estimate	Standard Error	T Statistic
Intercept	41.10 **	19.02	2.16
Average wage rate: Second quartile	5.69	7.89	0.72
Average wage rate: Third quartile	-12.74	9.29	-1.37
Average wage rate: Top quartile	-14.26	13.16	-1.08
Fringe benefit percentage: Second quartile	-13.74 *	8.09	-1.70
Fringe benefit percentage: Third quartile	-22.66 ***	8.08	-2.80
Fringe benefit percentage: Top quartile	-18.17 **	8.13	-2.24
Total nursing hours per resident day	3.78	4.99	0.76
100 or more beds	0.22	7.72	0.03
Urban county	9.68	11.40	0.85
Adjacent to urban county	12.71	8.00	1.59
For-profit facility	19.04 ***	6.29	3.03
Chain facility	-2.83	5.89	-0.48
Hospital based facility	-28.64 **	12.58	-2.28
County unemployment rate: Second quartile	9.84	8.00	1.23
County unemployment rate: Third quartile	-7.36	7.81	-0.94
County unemployment rate: Top quartile	12.52	9.89	1.27
Per capita income: Second quartile	10.01	8.20	1.22
Per capita income: Third quartile	6.90	9.43	0.73
Per capita income: Top quartile	25.81 **	11.17	2.31
Average facility workload	16.44 ***	6.02	2.73

Notes: N= 197 R-squared: 0.267

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Kansas Department of Aging, Medicaid Cost Report Data, 1999

Table 4.25
Regression Results: Turnover Percentage, RNs: Kansas

Variable	Parameter Estimate	Standard Error	T Statistic
Intercept	46.19 *	26.73	1.73
RN wage rate: Second quartile	-9.08	10.53	-0.86
RN wage rate: Third quartile	-5.39	11.33	-0.48
RN wage rate: Top quartile	-6.93	14.99	-0.46
Fringe benefit percentage: Second quartile	3.09	10.76	0.29
Fringe benefit percentage: Third quartile	0.18	10.54	0.02
Fringe benefit percentage: Top quartile	1.46	10.77	0.14
Total nursing hours per resident day	0.93	8.41	0.11
RN hours per resident day	-17.14	17.06	-1.01
100 or more beds	5.68	10.47	0.54
Urban county	5.66	13.53	0.42
Adjacent to urban county	18.38 *	10.10	1.82
For-profit facility	-1.94	8.71	-0.22
Chain facility	7.10	8.02	0.89
Hospital based facility	-12.63	15.36	-0.82
County unemployment rate: Second quartile	3.22	10.86	0.30
County unemployment rate: Third quartile	-6.11	10.15	-0.60
County unemployment rate: Top quartile	-6.81	13.00	-0.52
Per capita income: Second quartile	11.00	11.08	0.99
Per capita income: Third quartile	7.17	12.50	0.57
Per capita income: Top quartile	21.21	14.62	1.45
Average facility workload	0.10	8.08	0.01

Notes: N= 235 R-squared: 0.061

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Kansas Department of Aging, Medicaid Cost Report Data, 1999

Table 4.26
Regression Results: Turnover Percentage, LPNs: Kansas

Variable	Parameter Estimate	Standard Error	T Statistic
Intercept	15.06	25.18	0.60
LPN wage rate: Second quartile	6.33	10.63	0.60
LPN wage rate: Third quartile	2.22	11.23	0.20
LPN wage rate: Top quartile	9.59	13.03	0.74
Fringe benefit percentage: Second quartile	-7.36	10.90	-0.68
Fringe benefit percentage: Third quartile	-7.24	10.69	-0.68
Fringe benefit percentage: Top quartile	-3.85	10.99	-0.35
Total nursing hours per resident day	11.05	7.40	1.49
LPN hours per resident day	-41.04 **	16.30	-2.52
100 or more beds	9.66	10.26	0.94
Urban county	-11.94	12.68	-0.94
Adjacent to urban county	-0.26	10.70	-0.02
For-profit facility	6.72	8.45	0.80
Chain facility	8.58	8.10	1.06
Hospital based facility	2.23	16.48	0.14
County unemployment rate: Second quartile	2.86	10.82	0.26
County unemployment rate: Third quartile	1.71	10.76	0.16
County unemployment rate: Top quartile	18.79	13.30	1.41
Per capita income: Second quartile	19.86 *	11.07	1.79
Per capita income: Third quartile	12.20	12.59	0.97
Per capita income: Top quartile	40.79 ***	14.27	2.86
Average facility workload	3.61	8.07	0.45

Notes: N= 200 R-squared: 0.013

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Kansas Department of Aging, Medicaid Cost Report Data, 1999

Table 4.27
Regression Results: Turnover Percentage, Nurse Aides: Kansas

Variable	Parameter Estimate	Standard Error	T Statistic
Intercept	57.68 **	25.61	2.25
Nurse aide wage rate: Second quartile	13.88	10.43	1.33
Nurse aide wage rate: Third quartile	-10.18	11.58	-0.88
Nurse aide wage rate: Top quartile	-18.50	18.13	-1.02
Fringe benefit percentage: Second quartile	-13.77	10.91	-1.26
Fringe benefit percentage: Third quartile	-23.66 **	10.85	-2.18
Fringe benefit percentage: Top quartile	-14.00	10.91	-1.28
Total nursing hours per resident day	-0.24	6.69	-0.04
100 or more beds	-6.99	10.63	-0.66
Urban county	23.97	17.37	1.38
Adjacent to urban county	11.37	10.55	1.08
For-profit facility	13.37	8.51	1.57
Chain facility	5.81	7.88	0.74
Hospital based facility	-45.55 ***	15.54	-2.93
County unemployment rate: Second quartile	15.56	10.84	1.44
County unemployment rate: Third quartile	-7.60	10.65	-0.71
County unemployment rate: Top quartile	12.43	13.64	0.91
Per capita income: Second quartile	2.28	11.22	0.20
Per capita income: Third quartile	-1.60	12.79	-0.13
Per capita income: Top quartile	16.01	14.31	1.12
Average facility workload	20.45 **	8.09	2.53

Notes: N= 202 R-squared: 0.223

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: KansasDepartment of Aging, Medicaid Cost Report Data, 1999

1.1.4. Wisconsin

The Wisconsin data did not include either wage or benefit information, so we were not able to analyze how these factors affect turnover for Wisconsin facilities. We were, however, able to measure how measures of staffing levels, facility characteristics, and local labor market conditions affect turnover. Despite the lack of wage and benefit data, the Wisconsin models performed better than those for either California or Kansas. The overall model accounted for 29 percent of the variance in turnover in the state.

Staffing levels

In contrast to findings for Kansas, overall turnover was significantly lower at higher staffed facilities.

- Across all nursing staff, each additional nursing hour per resident day was associated with a 8 percent decrease in turnover, a statistically significant difference (Table 4.28).

- For RNs, there was no relationship between total nursing hours per resident day and turnover, but turnover was significantly lower for facilities with higher RN staffing (Table 4.29).

- There was no relationship between either LPN or total staffing and LPN turnover (Table 4.30).

- Nurse aide turnover was related to total facility staffing. Each one hour increase in total nursing hours per resident day was associated with a more than 9 percent decrease in nurse aide turnover (Table 4.31). This relationship was statistically significant at the 5 percent level.

Facility Characteristics

Consistent with results for California and Kansas, turnover was significantly higher at for-profit facilities. Among all nursing staff, turnover was 21 percent higher at for-profit facilities (Table 4.28). For nurse aides, turnover was 26 percent higher at for-profit facilities (Table 4.31). Both of these differences were statistically significant at the 1 percent level.

Overall turnover was not significantly different between facilities associated with a nursing home chain and independent facilities (Table 4.28). Among RNs, however, turnover was 14 percent higher at chains, other factors held constant (Table 4.29). There was no relationship between chain affiliation and turnover for LPNs and nurse aides.

As in California, turnover was lower at large nursing homes. Overall turnover was more than 8 percent lower at facilities with 100 or more beds than at smaller facilities, and this relationship was statistically significant at the 5 percent level (Table 4.28). Turnover for LPNs and nurse aides was significantly lower for large facilities—the largest relationship was for LPNs—LPN turnover was 13 percent lower at facilities with 100 or more beds than at smaller facilities (Table 4.30). This relationship was statistically significant at the 1 percent level. Nurse aide turnover was about 8 percent lower at facilities with 100 or more beds (Table 4.31).

Local Labor Market Characteristics

There was some evidence that turnover was lower for facilities in high unemployment counties.

- Among all nursing staff, turnover was 11 percent higher for counties in the highest unemployment rate quartile than for facilities in counties in the lowest quartile (Table 4.28).

- For nurse aides, turnover was 16 percent lower for facilities located in counties in the highest unemployment rate quartiles—this difference were statistically significant at the 10 percent level (Table 4.31).

- There was no relationship between turnover and county unemployment rates for either RNs or LPNs.

Overall turnover was more than 13 percent higher for facilities in counties in the top quartile in terms of per capita income than for counties in the lowest quartile (Table 4.28). This difference was statistically significant at the 10 percent level. For all three nursing categories, turnover was higher among facilities in high income counties, although the difference was statistically significant only for LPNs.

Facility Case Mix (Workload)

Unlike Kansas, we found no evidence of a relationship between facility case mix and turnover for Wisconsin facilities. Neither overall turnover nor turnover for the individual nurse categories was related to facility workload scores.

Table 4.28:
Regression Results: Turnover Percentage, All Nursing Staff: Wisconsin, 1999

Variable	Parameter Estimate	Standard Error	T-statistic
Intercept	74.89 ***	15.42	4.86
Total nursing hours per resident day	-7.78 ***	2.94	-2.65
For-profit facility	20.94 ***	3.85	5.45
Urban county	4.48	7.63	0.59
Adjacent to urban county	-1.06	6.37	-0.17
More than 100 beds	-8.10 **	3.39	-2.39
Chain facility	5.11	3.66	1.40
Hospital based facility	-5.45	6.37	-0.86
County unemployment rate: Second quartile	1.82	4.11	0.44
County unemployment rate: Third quartile	-9.99	6.57	-1.52
County unemployment rate: Top quartile	-11.07 *	6.47	-1.71
Per capita income: Second quartile	-1.96	5.52	-0.36
Per capita income: Third quartile	3.19	6.51	0.49
Per capita income: Top quartile	13.49 *	7.39	1.82
Average Facility Workload	1.04	5.16	0.20

Notes: N= 364 R-squared: 0.288

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Wisconsin Division of Health Care Financing, Bureau of Health Information, Annual Survey of Nursing Home, 1999

Table 4.29:
Regression Results: Turnover Percentage, RNs: Wisconsin, 1999

Variable	Parameter Estimate	Standard Error	T-statistic
Intercept	12.21	20.74	0.59
RN hours per resident day	-24.18 **	10.13	-2.39
Total nursing hours per resident day	8.31 *	4.89	1.70
For-profit facility	11.56 **	5.14	2.25
Urban county	1.20	10.21	0.12
Adjacent to urban county	-4.97	8.50	-0.59
More than 100 beds	-6.73	4.53	-1.49
Chain facility	13.76 ***	4.89	2.81
Hospital based facility	-4.49	8.60	-0.52
County unemployment rate: Second quartile	9.85 *	5.49	1.80
County unemployment rate: Third quartile	-1.67	8.77	-0.19
County unemployment rate: Top quartile	3.10	8.64	0.36
Per capita income: Second quartile	1.12	7.37	0.15
Per capita income: Third quartile	-0.52	8.73	-0.06
Per capita income: Top quartile	12.25	9.88	1.24
Average facility workload	0.39	6.95	0.06

Notes: N= 364 R-squared: 0.137

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Wisconsin Division of Health Care Financing, Bureau of Health Information, Annual Survey of Nursing Home, 1999

Table 4.30 :
Regression Results: Turnover Percentage, LPNs: Wisconsin, 1999

Variable	Parameter Estimate	Standard Error	T-statistic
Intercept	52.40 ***	18.27	2.87
LPN hours per resident day	4.86	8.17	0.60
Total nursing hours per resident day	-5.26	3.67	-1.44
For-profit facility	12.96 ***	4.51	2.87
Urban county	10.69	8.93	1.20
Adjacent to urban county	4.32	7.45	0.58
More than 100 beds	-12.79 ***	3.97	-3.22
Chain facility	0.59	4.33	0.14
Hospital based facility	-7.73	7.56	-1.02
County unemployment rate: Second quartile	-2.56	4.84	-0.53
County unemployment rate: Third quartile	-9.48	7.76	-1.22
County unemployment rate: Top quartile	-2.52	7.60	-0.33
Per capita income: Second quartile	-5.19	6.47	-0.80
Per capita income: Third quartile	-6.16	7.63	-0.81
Per capita income: Top quartile	16.74 *	8.67	1.93
Average facility workload	-4.11	6.03	-0.68

Notes: N= 363 R-squared: 0.170

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Wisconsin Division of Health Care Financing, Bureau of Health Information, Annual Survey of Nursing Home, 1999

Table 4.31:
Regression Results: Turnover Percentage, Nurse Aides: Wisconsin, 1999

Variable	Parameter Estimate	Standard Error	T-statistic
Intercept	91.87 ***	19.78	4.65
Total nursing hours per resident day	-9.52 **	3.77	-2.52
For-profit facility	26.15 ***	4.93	5.30
Urban county	7.06	9.78	0.72
Adjacent to urban county	0.17	8.16	0.02
More than 100 beds	-8.12 *	4.35	-1.87
Chain facility	5.62	4.69	1.20
Hospital based facility	-5.55	8.16	-0.68
County unemployment rate: Second quartile	1.97	5.27	0.37
County unemployment rate: Third quartile	-13.02	8.43	-1.55
County unemployment rate: Top quartile	-15.93 *	8.29	-1.92
Per capita income: Second quartile	-2.00	7.08	-0.28
Per capita income: Third quartile	7.15	8.35	0.86
Per capita income: Top quartile	14.45	9.48	1.52
Average facility workload	-0.82	6.61	-0.12

Notes: N= 396 R-squared: 0.240

***: Statistically significant at 1 percent level
**: Statistically significant at 5 percent level;
*: Statistically significant at 10 percent level;

Sources: Wisconsin Division of Health Care Financing, Bureau of Health Information, Annual Survey of Nursing Home, 1999

4.7 Conclusions

This chapter analyzed 1999 nursing home turnover for three states — California, Kansas, and Wisconsin — for which facility level turnover statistics were available. Turnover was calculated by comparing the total number of employees who worked during the year to a measure of the average number of employees at a given point during the year.

Relative to other sectors of the labor force, turnover rates in all three states were high, especially for nurse aides. In two of the three states, however, turnover levels were lower than those reported in the widely cited 1998 survey reported by the American Health Care Association, based on a survey of turnover in a sample of for-profit, chain affiliated facilites (AHCA, 1998). Turnover was considerably higher in Kansas than for either Wisconsin or California. Average turnover rates for all nursing staff ranged from 63 percent in Wisconsin to 72 percent in California, and 85 percent in Kansas. Nurse aide turnover ranged from 76 percent in Wisconsin to 78 percent in California and 100 percent for Kansas. RN and LPN turnover was considerably lower — around 55 percent in Kansas and 40 percent in Wisconsin. (Note that is was not possible to calculate RN or LPN turnover for California.) In California, the only state for which it was possible to calculate staff continuity, nearly 35 percent of direct nursing staff were employed at the facility for the entire reporting period. Only 22 percent of nurse aides had continuous service throughout the year.

There was considerable variation in turnover levels across facilities. Some facilities were able to keep turnover at relatively low levels, while turnover rates at other facilities were extremely high. In California, ten percent of facilities had overall turnover of 31 percent of less, while ten percent of facilities had turnover of more than 120 percent. One-fourth of the state's facilities had nurse aide turnover of 100 percent or more, while only 25 percent of facilities had nurse aide turnover of 46 percent or less. Staff continuity was 15 percent or less for the lowest decile of facilities, compared to 61 percent for the top decile. Similar variation in turnover levels was observed for Kansas and Wisconsin. While median turnover for nurse aides in Kansas was 92 percent, 10 percent of facilities had turnover of 35 percent or less. In Wisconsin, more than 20 percent of facilities had nurse aide turnover of more than 100 percent, but 20 percent of facilities had turnover of 43 percent or less.

To understand further the factors that might contribute to this wide variation in turnover levels, we estimated a series of multivariate regression models. The independent variables in the model included measures of facility characteristics, wage and benefit levels, staffing levels, and county labor market characteristics.

Evidence was mixed regarding the impact of wage rates on turnover. Across all California direct nursing staff, wage rates were not significantly related to wage rates. Among nurse aides in the state, however, turnover was significantly lower at facilities with higher nurse aide wage rates. Relative to facilities in the lowest wage rate quartile, turnover was more than 10 percent lower for facilities in the third quartile and 19 percent lower for facilities in the highest quartile. Both of these differences were statistically significant at the 1 percent level. For Kansas facilities, there was no relationship between hourly wage rates and turnover for RNs, LPNs, or nurse aides. No wage rate data were available for Wisconsin.

Benefit levels appeared to impact turnover much more than wage rates. For both California and Kansas, turnover was significantly lower in facilities with greater benefit expenditures. In California, nurse aide turnover was 18 percent lower for facilities in the highest benefit quartile than for facilities in the lowest quartile, and was 10 percent lower for facilities in the third highest benefit quartile. These differences were all statistically significant. Benefit levels were also significantly related to nurse aide turnover for Kansas facilities. Turnover for facilities in the third highest benefit quartile had nurse aide turnover that was 25 percent lower than facilities in the lowest benefit quartile. For RNs and LPNs, there was no relationship between benefit levels and turnover.

Evidence was mixed regarding the impact of staffing levels on turnover. In California, across all direct care staff, there was no relationship between total nursing hours per resident day. For nurse aides, turnover was lower at better staffed facilities, but the estimated impact was small. A one-hour change in nurse aides per resident day was associated with a turnover decrease of only 4 percent. In Kansas, contrary to our expectation, higher staffing levels were associated with higher, not lower, turnover levels. Each hour increase in total nursing hours per resident day was associated with a 10 percent increase in turnover. There was no relationship between staffing levels and nurse aide turnover. It was not possible to

investigate whether this is due to the greater number of staff in training that are presumably required at high turnover facilities.

We investigated the relationship between facility case mix and turnover, using the workload variable described in Chapter 3. We found no relationship between facility workload and turnover for facilities in California and Wisconsin. In Kansas, overall turnover and turnover among nurse aides was significantly higher in facilities with higher workload scores. Overall, these results do not provide support for the hypothesis that facility case mix is an important predictor of turnover.

Across all three states, turnover was significantly higher at for-profit facilities. The difference in turnover between for-profit and non-profit facilities ranged from 16 percent in California to 19 percent in Kansas and Wisconsin. None of the other measures of facility characteristics had a consistent relationship with turnover across the three states. In Wisconsin, turnover was significantly higher at facilities affiliated with a nursing home chain — no such relationship was found for California or Kansas. For Kansas, turnover was more than 40 percent lower at hospital-based facilities, but there was no difference in Wisconsin between hospital based and freestanding facilities. In California and Wisconsin, turnover was significantly lower at larger facilities, but there was no relationship between size and turnover for Kansas facilities.

The California data permitted analysis of nursing home staff retention. In general results for the retention models were consistent to those of the turnover models—measures associated with lower turnover levels were associated with higher staff retention. There was also a very strong relationship between facility size and retention, with retention rates much higher in larger nursing facilities.

In general, the county measures that we examined (urban/rural status, unemployment rate, per capita income), only the per capita income measure was related to turnover. In all three states, overall turnover was significantly higher in counties in the highest quartile in terms of per capita income relative to counties in the lowest quartile. Except in Wisconsin, where there was some evidence of higher turnover in areas with greater unemployment, county unemployment rate was not related to turnover. Adjusting for the other variables in the models, we found no difference in turnover rates between urban counties, counties adjacent to urban areas, and rural counties.

The overall statistical performance of the turnover models was modest — in most cases accounting for 20 percent or less of the variance in turnover levels. This suggests the potential importance of factors that we were not able to measure, such as the management practices described in the next chapter.

4.8 Policy Responses to Nursing Staff Shortages, Turnover and Retention Problems

1.1.5. 4.8.1 Demographic Trends and National Policies

Although estimates differ of the increase during the next 40 years of those over 65 - or the subset of the elderly who are most likely to need long term care, those over 85 – there is no question that the increase is substantial and unprecedented (Stone, 2000). This will create an enormous demand for long term care services. As we have seen the demand for RNs is unlikely to be met by an aging RN workforce and projected enrollments in nursing programs, at least in the near term. The projected supply of people who provide the vast majority of informal care to noninstitutionalized elders, primarily wives or daughters, is also shrinking because of changes in family structure (e.g., childless couples, smaller family size) and increased labor force participation of those who provide the majority of informal care, wives and daughters (Noelker, 2001).

Several broad national (and state) policies will impact the future demand of a long term care workforce, either mitigating or exacerbating the projected problem. These include: welfare policies, including child care services and the potentiality of new labor force participants; unionization which could impact wages and workplace organization; health policies with might provide for more universal health care; educational policy, including incentives for enrolling more students in nursing programs; immigration policies which can impact the availability of more workers to the secondary labor market as well as foreign trained nurses. Future demand could be mitigated by changes in long term care practice that would permit the substitution of LPNs or NAs for work now being performed by RNs. Other more direct factors that could affect the future demand are changes in regulation (e.g., regulations which require higher staffing ratios) and reimbursement policies which may increase or reduce the available resources for nursing (Stone, 2001; Callahan, 2001; Noelker, 2001; Buerhaus et al, 2000).

There is no way of knowing if any new policies will be implemented in the above areas, the specifics of policies that may be implemented, and what is the likely net effect. What is clear, however, is that long term care is highly dependent upon public financing with the vast majority of funding coming from the Medicare and Medicaid programs. Given that the majority of nursing home costs are for labor, and profit margins/surpluses tend to be small, the current financing for long term care results "in a highly expenditure-constrained environment"(Caro and Kaffenberger, 2001). This does not mean that there are not important policy issues and options for public payment within this environment, as discussed in Chapter 11. In summary, these broad policy areas may be ultimately important, but provide no guide to effective near-term programs and policies (apart from public payment) that are currently being considered by states and providers.

1.1.6. 4.8.2 State Programs/Policies

As a response to widely acknowledged problems in attracting a stable and well-trained direct-care workforce, several states have initiated activities directed to one or multiple objectives, including increasing CNA wages, improving staffing levels, improving CNA training, and some combination of commissions, taskforces, and studies. A state survey

conducted by the Paraprofessional Healthcare Institute (PHI) and the National Citizens' Coalition for Nursing Home Reform (NCCNHR) in the summer of 2000 indicated that for the 40 states responding to the survey, 26 states have through legislation, regulation, or budget action, initiated changes related to minimum staffing ratios (PHI, 2000). Some of the state activities seem minimal, and others have adopted more comprehensive strategies. Massachusetts, for example, has recently passed a comprehensive bill that authorized funds for wage increases, pre-certification preparation and certification training, and career advancement demonstration projects (see Chapter 7 for more detail of the Massachusetts' program; also see Appendix B for a more detailed state-by-state description of initiatives).

Not only is there considerable variability among states in the selection of broad strategies, but there is considerable variation among states that choose to implement a given strategy. The North Carolina Division of Facility Services has conducted state surveys on the use of Wage Pass Throughs (WPTs) to improve recruitment and retention of direct care workers. In general states with WPTs " . . .designate that some portion of a reimbursement increase for one or more public funding sources for long-term care must be . . . used specifically to increase wages and/or benefits for aide workers." A 1999 and 2000 follow-up survey found that a total of at least 18 states have initiated WPTs (North Carolina Division of Facility Services, 2000; see the Appendix B). The WPTs differ among the states with respect to the specific setting (nursing homes or home care), the specific target group (e.g., aides and other front line staff), whether providers are given flexibility in distributing the wage increases, and accountability procedures (Harmuth, 2001).

The 14 states responding to the follow-up survey varied in their perception as to the effectiveness of the WPTs. All 14 responding states indicated that aide recruitment and retention was still a problem, and only 33% indicated that the WPT had or probably had a positive impact. More importantly, none of the states have implemented an evaluation that could provide a reasonable assessment of effectiveness. Any change in turnover, positive or negative, could be due to other concurrent changes, such as changes in unemployment. Two states have apparently monitored changes in nurse aide turnover rates. Michigan has had a WPT in place for nursing homes since 1990. Aide turnover rates have dropped 74.5% in 1990 to 67.45% in 1998. This is not a particularly large decrease and very difficult to attribute to the WPT. In Kansas most facilities chose to use the funds to raise the wages of frontline staff. The second most common use was to pay for bonuses. The pass-through program facilities reported an annualized turnover rate of 107% for the period from July 1, 2000 through March 31, 2001. This was only slightly less than the turnover rate of 120% for *all* Kansas nursing facilities *in 1998.* Given that the participating facilities may not be comparable to all facilities taken as a group, that the years of the comparison differ, and other concurrent changes could also affect turnover, there is little that can be concluded as to effectiveness (Kansas Department on Aging, 2001).

Apart from the experiences and limited data reported by the states, there are good reasons to doubt the effectiveness of Wage Pass Throughs. First, depending on how the WPTs are implemented, the increase may not accrue to all facilities, to current NAs as opposed to new hires, and may not be sufficiently large to impact the decision to leave. Second, as we have discussed in the above qualitative study (Bowers et al, 2001), pay increases can be

implemented in ways that are interpreted by CNAs as dismissive of them personally and professionally; depending on implementation, a wage increase may not impact the decision to leave. The Pennsylvania study discussed above found that entry-level or starting wages had little effect on recruitment problems, but large increases in wages after a probationary period had a large effect. Third, although the quantitative analysis of turnover with newly available data that was presented above found a strong relationship in California facilities between NA wage rates and turnover, in Kansas turnover rates were actually somewhat higher at higher paying facilities. Our results suggest that increases in benefit levels may be a more effective way to reduce turnover.

In summary, we find a broad array of state programs to address perceived causes of the widely acknowledged problems of turnover and retention of front-line nursing staff, but the absence of evaluations which would permit even tentative assessments of effectiveness.

4.8.3 Private Initiatives

Among providers, professional associations, and provider networks, there has been a widespread diffusion of organizational precepts and management practices that are viewed as improving quality of care, including retaining NAs. In addition to the importance of wages and benefits, discussed above, other social supports include transportation and child care. Most important, there is an emphasis upon job redesign and organizational changes. Specific elements include the creation of career ladders and ongoing training to increase nurse aide commitment and improvement of knowledge and skills; enhanced autonomy consistent with recognized importance of the work; relative permanent assignment of the NA to a group of residents; involvement of the NA in determining and managing residents' care.

For some a number of organizational changes have been self-consciously adopted as a management philosophy, often with linkages to other nursing homes. For example, in the Eden Alternative homes (Thomas, 1994), there is an emphasis upon a less medicalized environment, one which reduces the all too common "loneliness, helplessness and boredom." This organization change seeks links to the larger community and the creation of an environment with children, animals, and gardens. Alternatively, Wellspring, a consortium of eleven freestanding nursing homes has developed a model " . . . based on the idea that management should foster quality of care with appropriate policies, but decisions on policy implementation should be left to the front-line worker who are most familiar with residents' needs." A more detailed description of these and other various models can be found in Stone (2001) and the GAO (2001).

However intuitively appealing these "best practice" interventions appear, no systematic evaluations have been completed, although a number are currently under way. Second, as demonstrated in the work of Bowers et al (2001) discussed above, there are no necessary linkages between a good practice in principle and effective implementation. For example, Banaszak-Holl and Hines (1996), contrary to the "best practices" listed above, found that turnover rates were unaffected by increases in aide training and the extent of aide involvement in resident assessments. They speculate that increased training must also be linked to changes in job structure and actual work autonomy and better career opportunities before there is an impact on turnover. Third, even if forthcoming evaluations of some of the

comprehensive management models are demonstrated to be effective, there remains the question of whether these models can be replicated in more typical facilities with less resources, skill, and commitment.

4.8.4 Summary/Conclusions

This and following chapter on nursing staff turnover and retention, as well as other chapters in this report, recognize that staffing ratios are only a part of the complex relationship between staffing and quality of nursing home care. Other aspects of the relationship, such as staff allocation among units and shifts, staff knowledge and training, staff supervision, staff turnover and retention, and management practices are also important, although not easily quantified. The current nursing workforce shortage and recruitment and retention problems are viewed as mutually reinforcing with both impacting negatively on quality of resident care.

As intuitively obvious as these presumed relationships may appear, the supporting evidence is rather slim. This is due, in part, to the absence of a national data sources for turnover, and the accuracy of the data for the smaller samples that are reported in the research literature. In many of the studies, the statistical models are weak. And it is possible that the relationships do not exist, or more likely, they are much weaker than presumed. Despite the general absence of direct evidence, there is a compelling rationale on the relationship between staff shortage and turnover/retention and the impact of both on resident quality of care. It is argued that high turnover compromises the continuity of care and supervision of staff. Further, several qualitative studies of nursing aides have pointed to the common perception of insufficient time to do needed care processes, not performing ("cutting corners") essential tasks, and the consequence stress and motivation of nursing aides to leave their jobs.

What is not in doubt, however, is that the current level of turnover is quite high compared to other occupations, with several studies pointing to RN and NA turnover rates above 50 percent and 100 percent, respectively. Statistical quantitative studies have pointed to the importance of wages, benefits, staffing levels, facility characteristics, and local labor market and economic conditions. This chapter analyzed the impact of these factors on turnover with newly available1999 turnover data for three states—California, Kansas, and Wisconsin. Relative to other sectors of the labor force, turnover rates in all three states were high, especially for nurse aides. Additionally, there was considerable variation in turnover levels across facilities. Evidence was mixed regarding the impact of wage rates on turnover. In California, however, turnover was significantly lower at facilities with higher nurse aide wage rates. Benefit levels appeared to impact turnover much more than wage rates. Evidence was also mixed regarding the impact of staffing levels on turnover. Across all three states, turnover was significantly higher at for-profit facilities. Among the county level measures examined only the per capita income measure was related to turnover.

The findings and other considerations discussed in the chapter suggest that a number of state programs and policies – e.g., Wage Pass Throughs (WPTs) and higher minimal staffing requirements – are unlikely to significantly reduce turnover. However, overall statistical

performance of the turnover models was modest—in most cases accounting for 20 percent or less of the variance in turnover levels. This suggests the potential importance of factors that we were not able to measure, such as the management practices described in the next chapter. Many of these "best practices" emphasizing job redesign and organizational changes – creation of career ladders, ongoing training, enhanced autonomy, relative permanent assignment of the NA to a group of residents, involvement of NAs in determining and managing residents' care - have been widely known to providers. However sound these management principles may be, qualitative studies suggest that their effectiveness depends upon how they are implemented. And no systematic evaluations have been completed, although several are currently underway. Even if forthcoming evaluation of some of the most comprehensive "best practices" management models are demonstrated to be effective, there will remain the question of whether these models can be replicated in more typical facilities with less resources, skill, and commitment.

Notwithstanding the above cautions, there is evidence supporting optimism about the potential effectiveness of these private initiatives to improve quality, staff recruitment and retention. The three state analysis demonstrated considerable variability in turnover and retention among facilities within each state. Not only is there considerable variability within the examined states, but also within the same local labor market. Thus it appears that the local labor market and other economic factors, while contributing to the generally high level of turnover, are not inconsistent with finding considerable variability within the same market. Most important, there is evidence that this within labor market variability appears to be significantly affected by management practices consistent with many of the "best practices" described above. The supporting evidence is found in the qualitative case studies of the next chapter.

References

American Health Care Association (1998). *Nursing Facility Sourcebook 1998*, Washington D.C.

American Health Care Association (2000). *Staffing of Nursing Services in Long Term Care: Present Issues and Prospects for the Future*.

Atchley RC (1996). *Frontline workers in long term care: Recruitment, retention, and turnover issues in an era of rapid growth*. Oxford OH: Miami University, Scripps Gerontology Center.

Atchley R.C., and Straker, J.K. (1999). *Recruiting and Retaining Frontline Workers in Long-Term Care: Usual Organizational Practices in Ohio.* Oxford OH: Miami University, Scripps Gerontology Center.

Banaszak-Holl J and Hines MA. "Factors associated with nursing home turnover." Gerontologist 36 (1996) 512-517.

Barry T. (1996). "Study identifies factors that reduce staff turnover." The Brown University Long-Term Care Quality Letter, 8 (11) 1-3.

Bell HS (1998). *Certified nursing assistant recruitment and retention pilot project: Phase I: Survey results*. Des Monies, IA: Iowa Caregivers Association.

Bowers, B., and Becker, M. 1992. "Nurses'Aides in Nursing Homes: Relationship Between Organization and Quality." *Gerontologist* 32 (3): 360-6.

Bowers, B., Esmond, S., Jacobson, N 2001. "Turnover Reinterpreted: CNAs' Perceptions of Being Dismissed*." Journal of Gerontological Nursing*.

Brannon, D. and Smyer, M. 1994. "Good Work and Good Care in Nursing Homes." *Generations* , Fall 34-38.

Broughton w and Golden MA (1995). "Profile of Pennsylvania Nurse's Aides." *Geriatric Nursing* 16 (3), 117-120.

Buerhaus, P.I., Staiger, D.O., Auerbach, D.I. (2000). "Policy Responses to an Aging Registered Nurse Workforce." *Nursing Economics/* November-December, 18 (6) 278-284.

Callahan, J.J. (2001). "Policy Perspectives on Workforce Issues and Care of Older People." Generations, Spring 12-16.

Caro, F.G. and Kaffenberger, K.R. (2001) "The Impact of Financing on Workforce Recruitment and Retention." *Generations,* Spring 17-22.

Caudill M and Patrick M (1989). "Nursing assistant turnover in nursing homes and need satisfaction." *Journal of Gerontological Nursing* 15 (6), 24-30.

Caudill M and Patrick M (1992). "Turnover among nurse aides: Why they leave and why they stay." *Journal of Long-Term Care Administration* 19, 29-32.

Caywood, H (1998). Certified nursing assistant turnover. *Annals of Long Term Care*, 6 (10), 5A – 6A.

Close L, Estes CL, Likins K,and Binney EA (1994). "Political economy perspective on frontline workers in long-term care. *Generations* 23(3) 23-27.

Helmer FT, Olson SF and Reim RI (1993). Strategies for nurse aide job satisfaction. Journal of Long-Term Care Administration 21(2) 10-14.

Institute of Medicine. Wunderlich, G., Sloan, F., and Davis, C., eds. (1996) *Nursing Staff in Hospitals and Nursing Homes: Is it Adequate?* Washington, DC: National Academy Press.

Institute of Medicine. Wunderlich, G., and Kohler, P., eds. (2001). Improving the Quality of Long-Term Care. Washington, D.C.: National Academy Press.

McDonald CA (1994). Recruitment, retention, and recognition of frontline workers in long-term care. *Generations*, 23 (3), 41-42.

McDonald I and Miller A (1998). *The staffing crisis in nursing homes: Why it's getting worse and what can be done about it*. Washington D.C.: Service Employees International Union.

Mercer WM (1998). *Mercer's Fax Facts Surveys: Turnover—How Does It Affect Your Business?* William M. Mercer, Inc.

Munroe, D. (1990) "The Influence of Registered Nurse Staffing on the Quality of Nursing Home Care." Research in Nursing & Health, 13, 263-270.

Noelker, L.S. (2001). "The Backbone of the Long-Term Care Workforce." Generations, Spring 85-91.

North Carolina Division of Facility Services (2000). *Results of a Follow-Up Survey to States on Wage Supplements for Medicaid and Other Public Funding to Address Aide Recruitment and Retention in Long-Term Care Settings*. http://facility-services.state.nc.us.

Paraprofessional Healthcare Institute (2000). *National Survey on State Initiatives to Improve Paraprofessional Health Care Employment*. http://directcarealliance.org/sections/pubs/st_staffing_survey/national_survey_on_state_

Pennsylvania Intra-Governmental Council on Long Term Care (2001). *Pennsylvania's Frontline Workers in Long Term Care: The Provider Organization*. Polisher Research Institute at the Philadelphia Geriatric Center, Jenkintown, PA.

Remsburg RE, Aramacost KA and Bennett R (1999). "Improving nursing assistant turnover and Stability rates in a long-term care facility." *Geriatric Nursing* 20 (4), 203-208.

Salmon JR, Crews C, Reynolds-Scanlon S, Lang Y, Weber SM, and Oakley ML (1999). *Nurse Aide Turnover: Literature Review of Research, Policy and Practice*. Tampa FL: Florida Policy Exchange Center on Aging.

Spector, W.D., and Takada, H.A. (1991). "Characteristics of Nursing Homes that Affect Resident Outcomes." Journal of Aging and Health 3(4):427-451.

Stone, R.I . "Research on Frontline Workers in Long-Term Care." *Generations*. Spring, 2001.

Stone, R.I. "Long-term Care for the Elderly with Disabilities: Current Policy, Emerging Trends, and Implications for the 21st Century." New York: Milbank Memorial Fund.

Thomas, W.H. *The Eden Alternative: Nature, Hope, and Nursing Homes*. Sherburne, NY: Eden Alternative Foundation, 1994.

5.0 What a difference management makes! Nursing staff turnover variation within a single labor market20

5.1 Introduction

This chapter addresses two basic questions: Why does turnover among nursing staff vary widely in long term care institutions, even among facilities located close together, in the same labor market? Second, what difference can management practices make in helping to understand the mechanisms associated with either high or low turnover? The report was submitted to Abt Associates as one contribution to a Congressionally mandated research study on the necessity, cost, and advisability of establishing nurse staffing ratios in U.S. nursing facilities. This research was conducted during spring and summer 2001 by the author via first-hand ethnographic research and interviews in nine long-term care facilities in four labor markets in three states.

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20 The principal author for this study was Susan C. Eaton, assistant professor of public policy at the John F. Kennedy School of Government at Harvard University. Contact information for author: Malcolm Weiner Center for Social Policy, John F. Kennedy School of Government, 79 JFK Street, Cambridge, Massachusetts 02138, phone 617-495-0869, fax 617-496-9053, email seaton@ksg.harvard.edu. This report was completed under a subcontract to Abt Associates, as part of a larger report for the Centers for Medicare and Medicaid Services (Subcontract No. 500-95-0062, T.O. # 3), Alan White, Project Director; and Marvin Feuerberg, CMS Project Officer). The author has studied U.S. long-term care settings for more than 20 years, as a consumer representative, labor representative, and academic researcher. Her Ph.D. is in Management, specializing in Organization Studies and Industrial Relations, from the Massachusetts Institute of Technology's Sloan School. Her previous experience relevant to this study involved extensive ethnographic observation and interviews with certified nursing assistants, managers, registered and licensed nurses, and residents, as well as advocates, industry experts, and government regulators (see Eaton 2000). She was a co-winner of the Margaret Clark Award for Anthropological Research for earlier nursing home research and writing. Her expertise is in interviewing and analysis of qualitative data, the kind collected in this project. She brought to the project a critical perspective on traditional nursing facility work organization, which she termed 'custodial' and which her research had led her to believe led to lower quality jobs and lower quality resident care. She had completed intensive research on alternative models and philosophies of care, both medical and social models, which she called 'high quality nursing' and 'regenerative' models of care (see Eaton 2000 for more detail, also Eaton 1997). The research team ensured, however, that no specifically "Pioneering" or other 'culture change' model facilities (such as Wellspring) were included in the study, so that no prior assumptions about these specific types of changes would affect the selection or the findings. Interestingly, several of the low-turnover facility leaders themselves mentioned the Culture Change, Eden or Pioneer movements, as models they were interested in emulating to achieve higher quality care and jobs. The author appreciates the thoughtful advice of Barbara Bowers and her collaborators on the Wellspring study, and the long-term insight into these issues generated by discussions with individuals associated with the Paraprofessional Healthcare Institute (PHI), especially Maryann Wilner, Sue Misiorski, Lois Camberg, Steve Dawson, and Barbara Frank. Other individuals who made valuable comments and suggestions on the analyses and draft text included in this chapter include Alan White and Donna Hurd of Abt Associates, and Marvin Feuerberg, CMS Project Officer. Alan White collected and analyzed the turnover data in Kansas, Wisconsin, and California. At the Wiener Center, Allyson Kelley provided expert administrative and coordination assistance, Kathleen Jervey handled budgetary matters, and Julie Boatwright Wilson provided leadership and support.

Labor economists typically explain turnover primarily as a function of labor-market choices of qualified workers. If two employers offer similar jobs, employees theoretically should be indifferent between one and the other. Certain institutional characteristics and types of managerial behavior, research has established, can induce employees to stay with a given firm, even in the face of better competitive conditions at another firm (Piore and Doeringer 1985; Baron and Kreps 2000). These characteristics may include offering an accessible internal labor market, so that promotion from within is a possibility, even for an entry-level worker. They may also include managerial practices designed to tie the worker more closely to the firm, either through seniority-sensitive wages and benefits (such as offering increasing paid vacation time or annual wage increases with each additional year of organizational tenure), or in the nature of work organization and teamwork. For instance, workers with motivating jobs are known to demonstrate higher organizational commitment and longer tenure; this is also true of workers who have extensive social ties with their co-workers, those who feel their contributions are valued, and those who have good working relationships with supervisors (Hackman and Oldham 1987).

The rate of staff turnover among nursing staff in long-term care institutions is extremely high, averaging 100 percent for certified nursing assistants (CNAs as they are called in this paper), 66 percent for registered and licensed nurses, 50 percent for Directors of Nursing and 25 percent for administrators (Institute of Medicine 2001). It is important to note that 100 percent turnover does not necessarily mean that every single CNA departs a facility in the course of one year, but that for every nursing aide who stays the full year, for example, two more came and one left, in a similar job at the same facility. Although costs vary, one administrator interviewed for this report estimated the cost of replacing one nurses' aide at "somewhere between $2,000 and $4,000 a person." A careful study has shown the average cost to be about $3200 in 1992 (Zahrt, quoted in Straker and Atchley 1999). This is a lot of money for nursing facilities, and is probably still an underestimate that does not sufficiently account for lost productivity and adequate training time.

High turnover in nursing jobs is plausibly related to higher rates of problems with quality of care, although studies have not definitively proved the relationship. Some providers and unions argue that turnover can result in inadequate, unsafe care, care without continuity, and even denial of care. (Paraprofessional Healthcare Institute 2001). Few longitudinal studies with clear outcomes related to quality have been conducted since Minimum Data Set (MDS) assessment data became available to some researchers. But a 1999 General Accounting Office (GAO) report noted that each year, more than one-fourth of nursing homes had deficiencies that 'either caused actual harm to residents or placed them at risk of death or serious injury' (US GAO 1999:3). While the average number of deficiencies in the U.S. in 1999 was lower than in 1993, at 5.7 per facility, still fewer than 18% of all facilities were deficiency-free (Harrington *et al* 2000). Particularly for residents with dementia, continuity of relationship with direct caregivers is important. One of the few studies conducted with residents themselves defining quality of care identified good relationships with direct care givers as more important to residents than the quality of food or medical care (National Citizens' Coalition for Nursing Home Reform (NCCNHR), 1985). Knowledge of individual residents' preferences and the ability to notice and report small changes over time is another benefit of longer-term nursing staff. Individualized care, as in the regenerative or "Edenized" models, requires strong relationships between residents and caregivers (Eaton 2000). As noted above, high turnover is also expensive for facilities and the public.

As part of a Congressionally mandated study on the appropriateness of establishing minimum nursing staffing at nursing facilities, this researcher conducted an investigation that gathered information directly from providers and staff about management practices and other factors that might affect nursing staff recruitment and retention. In collaboration with Abt Associates and CMS, a research team selected nursing facilities in each of three states, California, Kansas, and Wisconsin, where detailed turnover information is collected from nursing facilities and available to the public. The investigator interviewed managers, charge nurses, HR and staff development professionals, and front-line nurses and paraprofessionals to determine the cause for high or low turnover. Researchers selected facilities in the top and bottom quadrant of turnover, within the same labor market, within each state. The investigator conducted field studies at one or more "pairs" of facilities in each state.

The goal of this research design was to compare managerial practices in nursing facilities that were located in the same geographic labor market. The idea was to compare 'apples and apples,' in a sense. If workers were likely to stay in jobs at a nursing facility in a local area where similar workers were likely to leave another nursing facility down the street, the researcher team thought it could learn something by comparing the managerial practices of the two facilities.21 From the research literature in organizational behavior, management, sociology and human resources, it is known that supervisory relationships, staffing levels, wage levels, benefit levels, and even the organizational culture of care could make working in two apparently similar facilities a very different experience (Herzenberg *et al* 1999). This study was designed to delve deeply into the reasons for turnover in a local labor market where CNAs and other nursing staff had real choices of where to work, and why they chose to stay at one facility and not at another. If specific managerial practices can be seen in a close, qualitative study to be related to reductions or increases in nursing staff turnover, then perhaps such practices could be documented and made available to practitioners with the ultimate goal of providing better care at lower cost, as well as more stable jobs to nursing staff members.

21 Note that the original idea for this study occurred in conversations with Marvin Feuerberg from CMS director of the 2000 CMS study on nurse staffing in nursing facilities. Alan White and Donna Hurd of Abt Associates worked hard to refine it and make it a reality, and to identify comparable facilities in the three states and four cities. The author is grateful for their help and feedback; of course any remaining errors are her responsibility.

5.1.1 Existing Explanations for High Turnover

Researchers have studied staff turnover in many industries. Typical non-exclusive explanations given by economists and managers for high turnover in direct care nursing facility jobs include the following:

- Frontline workers are marginal job seekers who cannot keep a job, come to work regularly, or perform reliably
- Frontline workers are poor workers, often single parents, who have little support at home for work requirements and therefore often miss work because of an absence of adequate or reliable child care, transportation, etc.
- Frontline workers are workers without a 'good work ethic,' as contrasted with workers of the previous generations
- Frontline workers are typically low wage workers who have lower job commitment and attachment in general
- Frontline workers are often immigrant workers who may have troubles with work status, with the law, with school, relatives who live great distances away, or with other commitments
- Frontline workers are workers for whom serious economic and life problems are only one paycheck away—often without health insurance, savings, retirement incomes, etc. Thus they are not likely to be stable, committed workers since life difficulties can prevent them from attending work regularly or productively.

No doubt examples exist of all of these in the long-term care nursing workforce, particularly of 'marginal worker' issues in the case of recent welfare recipients (partially because of relatively little work experience). **However, the fact that some nursing facilities exhibit extremely low turnover compared to other nursing facilities located just down the street, when they are hiring and employing the same workforce, makes some of these broad explanations of limited use.** The explanations may all be correct at some level, but even given the relatively high levels of turnover in the long-term care industry, it is clear that a great deal of variation exists within the industry and even within neighborhoods. The mean level of turnover in nursing facilities may always be higher than in, for example, hospitals, but the variation within nursing home settings is what is interesting and what requires new explanation. That is the goal of this report.

Managers interviewed in this study from high-turnover facilities tended to see high turnover as inevitable. For instance, one said, "*Most CNAs only stay three to six months. For some reason or another, they move on. Most people on the night shift are employed on more than one job, maybe their full time job has better pay or benefits."* Managers also offered varying explanations for the difficulty in recruiting workers. One blamed the FBI tests required for nursing staff, and also increased awareness of patient abuse. "*We would have more nurses, but since they passed the bill that they had to be fingerprinted, they stay away. Some of them have reformed, something happened a long time ago. Why do they take their certificate? We get a letter in the mail, and then they got to go. This happens when they try to renew their certificate…"* As for why there is a nurse shortage, *"We are all doing nasty jobs. They don't make enough money. Right now, it's a lot of things going on. If a patient gets bruised, it's patient abuse."* Another nurse in a high turnover facility explained that some people's departures encouraged others. "*The pattern… is fast turnover. I need a nurse now. One*

person left, told the others, it is a chain thing. They tend to follow, especially when it is a friend."

The typical explanations for high turnover commonly heard among managers and labor economists do not clearly take the workers' own perspectives into account. This chapter seeks to help remedy these problems in explanation by reporting both managers' and workers' opinions about turnover and retention in today's nursing facilities, and what they say about their own life and work experiences makes them stay at a job or leave it. While it is not a large or 'representative' sample by design, the quality of information attained from the interviews should help us understand the mechanisms by which key nursing facility employees' individual decisions are made.

5.2 Methods: Selecting Geographic Areas and Facilities, Approaching Staff, and Conducting Observation, Documentation, and Interviews

As the goal of the study was to investigate conditions at individual facilities, the research team first identified three states that collected turnover data from nursing facilities in their jurisdiction. These states, Kansas, Wisconsin, and California, are among the very few where individual nursing classification turnover figures are collected and published statewide. If more states collected turnover data at the level of RNs, LPNs, and CNAs, researchers would be able to do broader studies in more geographic areas.

The most recent data available were from 1999. Given the high turnover figures in all levels of nursing facility administration, researchers were conscious that the reasons nursing turnover was high or low in 1999 might have changed by 2001. In fact, in five of the nine cases selected, new administrators were in place in the facilities since the original data were reported. In some cases, this eased access since the newer administrators were making changes to the conditions that had contributed to particularly high (or in one case, low) turnover, and were willing to discuss those prior conditions without defensiveness. More current data would improve both researchers and consumers' access to this important workforce information.

5.2.1 Selection of Geographic Areas

Having picked three states with available relevant data, investigators selected four different types of geographic areas: one suburban (Olathe, Kansas), one medium-sized city (Milwaukee Wisconsin), one rural (Fresno, California), and one large urban setting (Long Beach/ Los Angeles, California). While this study does not attempt to identify a random sample, these cities were chosen to represent a variety of settings where long-term care facilities occur in sufficient numbers to provide at least one 'matched pair' as described above. Investigators wanted to have a back-up facility for each location, in case access was problematic. (This proved wise; during the visits, one high-turnover facility had health inspectors visiting and asked the researcher to leave during this process, although another low-turnover facility welcomed the researcher despite the presence of state surveyors. In another case, a high-turnover facility declined to participate beyond one set of interviews, and another similarly situated facility was chosen in the same area). Locations all had to be sufficiently large to have both

above and below-average facilities present, so a number of smaller towns were excluded from consideration.

5.2.2 Selection of Facilities

Investigators created a paired set of comparable facilities (in size and location, using zip code or actual short mileage distances apart as a proxy for co-location). As noted above, selected paired facilities were required to be either in the top or bottom quartile of their state's distribution of turnover statistics. Alan White of Abt Associates and the researcher utilized the overall nursing staff turnover as the main baseline figure, but they also examined Certified Nursing Assistant (CNA) turnover figures in particular, since aides deliver more than 90 percent of hands-on care, and turnover in their ranks in particular is believed to be associated with lower quality care. Certain exclusions were applied to the statewide data set before choosing pairs (see White's chapter for further details): publicly owned and operated facilities, hospital-based facilities, and those with fewer than 75 beds were excluded as non-typical for this study. The research team did not select facilities based on structural characteristics such as ownership, size, Medicaid percentage, acuity level, staffing levels, occupancy, or any other. The final sample included proprietary and voluntary facilities, religious and non-religious facilities, single-owner and chain facilities, and 75 percent non-union and 25 percent unionized facilities, so the researcher visited a range of structural settings.22 Researchers chose lower limit on beds at 75 and an upper limit at 250 to capture the bed range that includes most facilities in the U.S. Researchers also excluded public sector facilities, because of their generally larger size and frequently different labor market experiences (for instance, in Wisconsin the public sector facilities typically have extremely low turnover, in part because they offer county worker union benefit levels, including pensions and health insurance, unlike most other nursing facilities). Researchers matched facilities in the same local labor markets that were approximately the same size.

Table 5.1 below shows the turnover level contrast in nursing staff between the facilities selected for interviews and visits. The paired facilities were all within a few miles (or less) of each other. Note that the percentage of turnover is that of Certified Nursing Assistants (or CNAs), except where noted.

Table 5.1
Summary of Selected Facilities and Interviewees (in addition to Observation)

Nursing Facilities Selected for Research	Kansas	Wisconsin	California (Urban, Rural)	
Facility A (low)	33%	52%	24%	31%
Facility B (high)	190%	167%	165%	96%

22 Though two facilities (both in Wisconsin) were unionized, and the researcher asked to speak to the union representatives in both buildings, no elected or appointed employee union leaders were working during the days when the facility was visited. Since both a high-turnover and low-turnover facility were unionized in this small sample, unionization alone cannot explain the differences found, although in general unionized facilities have lower turnover in all industries including health care (Baron and Kreps, 2000, Kochan, Katz and McKersie 1986). About 10 to 12 percent of the nursing facilities in the U.S. are unionized.

Once the four separate pairs of facilities were identified, the researcher faxed the administrators a letter, attaching a CMS letter of introduction, and requesting convenient dates for a visit of two days. Facilities were encouraged to participate in an introductory letter from Steven A. Pelovitz, Survey and Certification Group Director, Center for Medicaid and State Operations, Health Care Financing Administration. All facility and individual participation was voluntary; and no facility or individual was required to participate. As noted above, one facility declined to participate, so it appears that facilities felt this choice was real. The researcher committed herself to the least possible disruption of patient care and arranged visits for this purpose after consultation with administrators.

Only one facility specialized completely in dementia care, a low turnover facility in the Los Angeles area. Several other facilities had dementia units, however, including one that had early-stage, mid-stage, and late-stage Alzheimer's disease units. One facility in the mid-sized city was located in a self-described "inner city" neighborhood, though it was not far from another facility that was on the edge of the city, also in a low-income neighborhood, but with a more diverse staff and resident base.

5.2.3 Actual Site Choices and Planning of Visits

In two of the four proposed locations, the researcher had to select and ultimately visit a backup facility, but these additional facilities fit the established criteria (and it is the actual facilities' visited CNA turnover rates that are reported in Table 5.1, above). In one case, a facility's manager was out of town for the two weeks before a visit and did not return repeated calls, and then she decided on the evening of a visit planned by the researcher and the director of nursing that the facility was 'too busy' to have the researcher visit. In this instance the administrator and the director of nursing were interviewed by the researcher after repeated calls, but the administrator declined to participate in the study more extensively, and an alternate local "high turnover" facility was selected for intensive interviews. In the second instance, an administrator made a valid case that his low-turnover facility was not typical because of its role in an integrated health system, extremely high acuity patients and a large number of geriatric-psychiatric cases. After interviewing him, the research team agreed and chose a different low-turnover facility in the area that was also a good match for the high-turnover facility chosen.

After selecting facilities, preparing research materials, and negotiating access, the researcher arranged dates and times for her visits, usually through phone calls with facility administrators. To minimize disruption to patient care, the investigator stayed a maximum of two weekdays in each facility, though she always stayed over either two or three shifts. No weekend visits were scheduled. The researcher sought to collect relevant archival data related to the cost of turnover at the facilities, but in general found that administrators and business managers routinely do not track the cost of turnover, or know their own rates of turnover as reported to the state. The researcher also collected local labor market information such as classified ads and recruitment materials.

For purposes of this report, all facility identities were confidential, as were all individual identities. Specific characteristics of the individual facilities and interviewees are described accurately but not so

as to violate confidentiality. Names were changed to preserve this confidentiality agreement with interviewees.

5.2.4 Visits, Observation, and the Interview Process

The full site visits typically began with individual interviews with the administrator and director of nursing, then the researcher followed up with staff development and human resource directors, charge nurses and other nursing staff, schedulers, and certified nursing assistants on all shifts. The interviews were semi-structured, using a series of questions outlined in the summary memo attached as Appendix C-1, but adjusted for each particular location, person and position as appropriate. Appendix C-1 includes an outline of the visit process, and some types of questions asked, as well as a list of additional types of individuals interviewed in the course of the study.

The researcher began by asking questions about staff shortages, recruitment and retention costs and experiences, and about the management philosophy and practices in each facility. The researcher asked about the personal and professional background of key leaders and of the nursing staff, including how they had become trained in nursing and how they had each come to the particular nursing facility, shift and role they occupied. Based on a knowledge of the research literature, the researcher investigated the organizational 'culture or philosophy of care' and work organization, whether medical, social, or custodial, or even partially 'Edenized' in a few cases. The researcher asked about second jobs, about transportation and child care issues, about what each employee liked and did not like about her particular job and the particular facility, and about prior jobs and comparisons to other nursing facility or health care experiences.

When staff members were not available, or when the researcher had interviewed sufficient staff members on a shift or unit, the researcher conducted ethnographic observation, for a total of about 25 hours in addition to interview time. Each facility that permitted access was visited for between 20 and 24 hours; the two facilities that limited access were visited for about 8 hours each, and the one facility that denied broader access was visited for 2 hours for an interview and observation. In a few cases, groups of nursing staff were interviewed in informal sessions, as in a break or meal room, or at the end of a shift. In this type of interview, the researcher learned less about individuals, but more about their interactions and collective opinions. The researcher also spoke in limited depth to a total of about 35 residents, but these were not formal interviews. The researcher obtained useful and interesting information from residents, mainly through casual discussion while waiting in lounges, lobbies, dining rooms, etc. The researcher asked about the specific experiences they had had in this facility, and with staff, but did not conduct any structured interviews with residents. Sometimes the researcher asked them about their lives in and out of the nursing facility, and occasionally the researcher offered assistance when it was needed and not provided by staff (getting a sweater or a drink, for instance). Some residents volunteered information about the aides and nurses they knew. The researcher debriefed the entire visit with the administrator or another management person before leaving the facility. The researcher sent the draft report back to each facility for comments or corrections, which were incorporated before the final report was submitted.

The total number of employee and volunteer interviews conducted in approximately four weeks of field research was 159 (plus one group of 8 CNAs), broken down as indicated in Table 5.2 below (see

also Appendix C-2 for a complete chart of the individual position holders interviewed in each facility):

Table 5.2
Summary of Selected Facilities and Interviewees (in addition to Observation)

Kansas (n = 45 interviews)
Facility 1 – Kansas (low turnover) - 25 interviews. Religious non-profit chain facility. New administrator.
Facility 2 – Kansas (high turnover) - 18 interviews. For-profit chain facility. New administrator.
Facility 3 – Kansas (high turnover) - 2 interviews – Administrator and Director of Nursing (*administrator would not permit interview of additional staff).* For profit chain facility.

Wisconsin (n = 31 interviews)
Facility 1 – Wisconsin (low turnover) - 7 interviews, all individual; *administrator did not keep initial appointment and HR director refused admission until administrator returned 3 days later.* For profit unionized chain facility. New administrator
Facility 2 – Wisconsin (high turnover) - 24 individuals plus one group of 8 CNAs For profit unionized chain facility. New administrator

Los Angeles (n = 29 interviews)
Facility 1 – Los Angeles Area (low turnover) - 20 interviews – Not for profit chain facility
Facility 2 – Los Angeles area (high turnover) - 9 interviews (*administrator refused return visit because of health officials in the building investigating a complaint)* For profit chain facility. New administrator

Rural California (n = 54 interviews)
Facility 1 – Rural California (low turnover) - 32 interviews – Community non-profit facility, affiliated with community hospital.
Facility 2 – Rural California (high turnover) - 22 interviews – Privately owned for profit facility.

Interviews ranged from 10 minutes to more than 90 minutes, with an average interview length of around 20 minutes for line staff, and 45 minutes for administrative staff. Most (approximately 75 percent) of the interviews were taped, except where interviewees declined to be tape-recorded. Written consent forms were obtained from each interviewee; all interviews were conducted under guidelines submitted to and approved by the Harvard University Human Subjects Research committee. After each site visit, the researcher wrote detailed field notes, transcribing interviews where appropriate, and completed a draft analysis. The researcher began the fieldwork on May 21, 2001, and completed it on July 28, 2001. The researcher drew from hundreds of pages of interview

and observation notes to abstract information for this chapter.

5.2.5 Deliberate Variation in Turnover Patterns

The variation in turnover was by design significant within each "pair." In all cases the high turnover facility had at least 100 percent turnover in its certified nursing assistants (CNAs) in 1999. The low turnover facility in each pair frequently had less than 40 percent turnover in 1999. In most cases the low turnover facility administrator was conscious of having unusually low turnover. In one case, a sizable portion of the management staff had been at the facility for more than 10 years. The administrator had been there 14 years and still felt himself relatively new. In another case, the top managers knew their facility had relatively low turnover, but were still troubled by their level of 30 percent or so, which is in fact high compared to the national average for all industries, which (excluding layoffs) hovers between 10 and 20 percent. This administrator was surprised to find that they were doing better in this regard than other facilities, and she asked for permission to report the visit by the researcher in her newsletter, since like many nursing facility managers, she rarely received positive feedback on her work and wanted people to know that the facility was doing 'something right.'

5.3 Findings

Many specific managerial practices differed characteristically between low-turnover (LT) and high-turnover (HT) facilities (LT and HT are used henceforward in this chapter). Overall, however, five areas stand out as distinguishing facilities with low nursing staff turnover. The five patterns found in this study to be associated with lower nursing turnover are:

- High quality leadership and management, offering recognition, meaning, and feedback as well as the opportunity to see one's work as valued and valuable; managers who built on the intrinsic motivation of workers in this field
- An organizational culture, communicated by managers, families, supervisors, and nurses themselves, of valuing and respecting the nursing caregivers themselves as well as residents
- Basic positive or 'high performance' Human Resource policies, including wages and benefits but also in the areas of 'soft' skills and flexibility, training and career ladders, scheduling, realistic job previews, etc.
- Thoughtful and effective, motivational work organization and care practices
- Adequate staffing ratios and support for giving high quality care

The next sections of the report expand on, explore, and explain these findings through making reasonable inferences from the data collected. Frequent use is made of examples and direct quotations from workers and managers interviewed during the field research. First, however, is a description of the typical high turnover facility versus the typical low turnover facility.

5.3.1 Typical High vs. Low Turnover Facility Profiles

In most cases, the low turnover facility visited was easily distinguishable as a better place to live and work—these facilities had less odor of urine and feces than high turnover facilities, in the most immediate impression upon entry. The researcher also typically noted residents wearing fresh unstained clothing who were clean and well groomed, saw individuals demonstrating few behavioral problems that disturbed other residents, and observed few people wandering aimlessly or sitting lined up in wheelchairs by nurses' stations. Residents in low turnover facilities appeared attuned to particular staff members, calling them by name, and were also likely to speak to visitors in a way that made clear that they felt safe, not frightened, even when they were confused. This is not to say that the low turnover sites were on average better decorated or fancier facilities—in fact, one had such a plain waiting room that it could have been a bus station except it was far too small. Only one selected facility was religious in its ownership and mission, and the staff members there wore nametags that spoke of their mission to care for others in Christ's love. Most could not be distinguished by their furniture or formal decorations, but by the actual activities, level of interaction, comfort level of residents and visitors, and obvious presence of staff.

On the other hand, the high turnover facilities had a more desperate and chaotic air about them, no matter what time of day or night they were visited. Staff were rushing around (or difficult to find in empty corridors), residents were calling out, crying, and even screaming, call lights were typically buzzing, flashing, or ringing with no one appearing to pay attention, very few smiles were in evidence, and at times entire parts of the buildings seemed to be abandoned by staff. In these facilities, employee break rooms were gloomy, dark, and dingy (more than one with old furniture stacked, and stained falling ceiling tiles), dirty dishes were sitting in carts in the hallways, soiled linens were usually not covered, and odors ranged from the merely unpleasant to the almost unbearable.

Administrative knowledge of variations in nursing staff turnover was in general lacking. "Our turnover is not too high," said one administrator. "In one month, we lose 8 or 9." This was on a staff base of 90, putting the facility turnover rate at almost 120 percent per year if this was accurate. In the month of April 2001, for which the researcher reviewed the records in this facility, there were 6 quits and two terminations, both "for attitude problems." So the administrator's estimate seemed accurate. The quits were half labeled as "no call no show" and half as "found another job." The administrator at this high-turnover facility told the researcher that she would not *usually* hire back someone who had quit by being "no call no show" three times, but it depended how desperate she was. The researcher told another administrator that two years previously, the facility had 100 percent nursing turnover. She said, "I don't know! I don't think it is that high..." After reviewing the records, she agreed that it was at least 100 percent then, and still was.

The researcher found one exception to the pattern described above among the four low turnover facilities visited. The inner city nursing facility did not have a calm or positive interactive feeling about it. Rather, everything was threadbare (this was a corporate for profit facility), from the residents' clothes to the furniture. The facility was unwelcoming in general. There the administrator

did not keep her confirmed appointment with the researcher, who had to call the HR director (supposedly left in charge) five times before she agreed to be interviewed herself, but not to allow other interviews until the administrator returned several days later. (The administrator had been 'pulled' to another facility where problems threatened, but left no note or instructions for her subordinates in charge.) In this case, the investigator spoke eventually with a number of long-term employees, but learned they were long term because they felt resigned and not as if they had any other options—a kind of 'continuance commitment,' where they felt stuck rather than affirmatively deciding to stay (Meyer and Allen 1997). Some stayed because they had known other staff and the residents for a long time, and the facility staff had become their second family. Others stayed because some small perquisite of longer service (such as an additional week of vacation after 10 years) did help keep them tied to one workplace. But this was unusual; staff in other low turnover facilities stayed for more positive reasons of affection or loyalty, they told the researcher.

A parallel exception to the generally gloomy managerial outlook among the high turnover facilities was found where the administrator was new and had been in charge for less than 3 months, though she had worked as a social worker at the facility for more than 10 years previously. Because she was new in the job, she felt she could make changes, and the employees interviewed generally thought her changes were headed in the right direction. So this was a high turnover facility (in the past) where, if the proposed changes were successful, one would expect turnover rates to fall in future years.

In general, however, if a visitor walked blindfolded into the selected pair of facilities in each community and sat in the lobby or dining room for less than one hour, he or she could have accurately predicted which was the 'high turnover' (or less desirable) workplace, and which was the low turnover (or more desirable) workplace. For the most part, although this was not able to be confirmed by data analysis of reliable quality or clinical outcome information, the better workplace was also likely to have been a better place to live as a resident, in the researcher's view. Employees interviewed also agreed—sometimes employees explained that they had stayed in a job at a particular facility because "it is clean" or "they care about the residents here." Employees generally indicated they hated to work at a place where residents and employees are miserable. In one case of a high turnover facility where several residents appeared dirty and disheveled, with food stuck to their clothing, employees seemed to sincerely believe that ALL nursing facilities were like this one, and there was no difference between them. However, in the low turnover facilities, a significant number of employees reported that they had worked elsewhere in the long term care system in that community or others, and believed that the place they presently worked was a better place to work and to live. They could make distinctions that were rarely made by nursing staff in the higher turnover facilities, at least in this study.

The next section of the report provides more detail about the five key management practices associated with the low turnover facilities, compared with their absence in the high turnover facilities. The five practices can be summarized as: high quality leadership and management, valuing and respecting the caregivers themselves. basic positive HR policies, motivational work organization and care practices, and adequate staffing ratios and support for high quality care.

5.3.2 Five Key Positive Management Practices Associated with Low Turnover

The five key positive management practices found in this study to be associated with low turnover were:

(1) High quality leadership and management, offering recognition, meaning, and feedback as well as the opportunity to see one's work as valued and valuable;
(2) A culture of valuing and respecting the caregivers themselves as well as residents
(3) Basic high performance HR policies, including wages and benefits but also in the areas of 'soft' skills and flexibility, scheduling, realistic job previews, etc.
(4) Thoughtful and effective, motivational work organization and care practices
(5) Adequate staffing ratios and support for giving high quality care

First, low-turnover facilities had a significantly higher quality of leadership found in management ranks, especially administrators, directors of nursing, and either staff developers or charge nurses. In the low turnover (LT) facilities, frequently the administrators had been in place for a long time and were well known and well respected across classes of workers. In high turnover (HT) facilities, a revolving door of leadership was evident, including either directors of nursing (DONs) or administrators (NHAs) or both. Often these leaders in both settings promoted distinct 'cultures of care,' sometimes with an innovative bent.23 In homes where previous turnover statistics were high, in two cases, new administrators had been hired who were taking actively different stances toward the work, care, and patients than their predecessors. In these facilities, a very cautious attitude of optimism about improvements was tangible. Also, leadership style seemed to 'cascade' down to managers, and supervisors. One high-turnover administrator, for instance, was unable to get her charge nurses to agree to act as supervisors even though they were legally and technically the CNAs' supervisors. This was a mystery to the administrator, who threw up her hands. Something about the particular size and management structure typical of nursing facilities seemed to make them very vulnerable to poor leadership in the top one or two positions, but also very responsive to strong leadership in those same roles (though it seemed to be faster and easier for a good facility to turn into a marginal one than vice versa, at least according to the managers and workers interviewed here).

Second, a culture of valuing and respecting caregivers, and the realities of their lives, was dominant in the low-turnover facilities. This emerged in several ways, such as bulletin boards recognizing long service (one had 5, 10, 15, 20 and 25 years, with photos of the staff, their names, and also a list of the 4-year staff who were just about to achieve service of five years). This same facility had a bulletin board with photos of new staff, and also posted an information sheet each one had filled out, about his or her background, family information, and things he or she wanted others to know about him or her. Clearly being a worker in this facility was to 'be somebody.' It was interesting that new residents also had a bulletin board with photos and descriptions in that facility. In contrast, in a high turnover facility, the administrator said she would "*never hire a CNA with a resume—that person is a 'wannabe' who will cause trouble on the floors. They think they are MORE than a CNA.*" The same administrator said, in speaking of CNAs' concern about contracting AIDS from patients, "*I do not tolerate stupidity very well."*

This culture of respect extended to the needs on the job (whether supplies, assistance, etc.) as well as off the job (flexible scheduling, emergency loans, etc.) When aides needed to change their schedules in one facility, an administrator said, "*I let them. I am willing to pay the*

23 Note that the concept of a management 'philosophy of care' was developed in the researcher's earlier writings referenced earlier, while 'culture of care' is a term used in the Pioneer Network and other circles where innovative leadership and management cultures at nursing facilities have been encouraged and shared.

overtime to someone else. We don't fuss about the overtime. It's more important that they be able to take care of their families and themselves." Hardly anyone had left the staff in the last year because they were unhappy with the job. In general, relationships were valued in the low-turnover nursing facilities –between workers themselves, between residents, between workers and residents, and with families. This quality was noticeably absent in the high-turnover facilities.

Third, low turnover facilities applied a variety of basic positive or 'high performance' human resource (HR) policies, including those related to wages, benefits, and total compensation but also in the areas of 'soft' skills and flexibility, training and career ladders, scheduling, realistic job previews, etc. (Appelbaum and Batt 1994). This chapter describes compensation issues first, and then highlights other policies that were less costly to implement but seemed to have a larger effect on workers' lives. Some classic HR principles having to do with attracting, selecting, and retaining workers were seldom followed in the high-turnover facilities. Further, workers were rarely given a realistic job preview or an adequate orientation. This increased early turnover. Even where some workers stayed longer, a sudden and apparently arbitrary change could upset them and cause them to leave.

Fourth, a set of "care practices" related to the motivational organization of work and effective care giving clearly made some of these nursing facilities better places to work than others (and also, probably made them better places to live, although this study was not designed to measure that outcome). These included consistent assignments between residents and aides, sufficient staffing, careful attention to emotional and religious passages in life, organizing eating and bathing in ways that rarely caused conflict and distress for residents or caregivers alike, involvement of aides in care planning meetings (though this was rare), or at least seeking their input into the decisions about care for residents they know well, and celebrations. In general these practices were more likely to be linked to decentralized decision making and an absence of arbitrary changes without involvement or explanation of nursing staff.

Finally, a critical variable was having a sufficient staffing ratio, and other practices that encouraged high quality care. While managers often complained that there would never be felt to be enough staff, objectively different staffing ratios existed in high turnover and low turnover facilities. In the workplaces where people stayed longer over time, aides had 5, 6, or 7 residents to care for on a typical day shift; in the high turnover facilities, their assignments were more typically 8, 9, 10, or even 12. When someone called in, especially on evenings or nights, aides studied in these brief visits had 20 or even 30 residents to care for. This did not only extend to CNAs. The licensed nursing staff also found themselves short. In one high turnover facility, the RNs worked 14 hour shifts one day and several came in the next to do another 12 hours, because no one else was available to work. One director of nursing in a high turnover site had quit her facility after working as the only RN in the facility for 17 months. She had been on call 24 hours a day and 7 days a week for nearly a year and a half, as every facility is required to have an RN on call at all times. Only after getting a written agreement to hire two other RNs, both assistant DONs, had she returned to the (still high turnover) chain-owned facility. Not surprisingly, other staff in that facility also reported being short-staffed.

Both for paraprofessional and licensed staff, the issue of having enough staff was described as basic. The most common answer to the researcher's question, 'what would make people stay in nursing?' was "more money, more staff." Or even more often, the researcher heard: "more staff, more money." Not having enough staff on payroll and on daily work shifts turned in these cases into a circular problem—with fewer staff, the ones who were there worked harder and more quickly burned out; they may have experienced more injuries because there was no one to help them lift heavy patients; and they also described that they felt more entitled to call in themselves the next time they didn't feel well or had a personal emergency. Eventually people described that they usually left this kind of situation where they were always working short, and could never predict who they would be taking care of next, and then the shortages had intensified. In lower-turnover facilities, the researcher noted that longer-term relationships and a personal history between nursing staff members existed, so they were more willing to cover for each other, to come in and work on someone else's scheduled day, or to trade off, in part because they knew that person would still be around to trade with them when they needed a favor in exchange. Sociologists or political scientists might call this 'social capital,' but nursing home workers called it common sense.

5.3.3 Support for the Findings: Inferences from the Field Data

The next sections of the report expand on and exemplify the findings through making reasonable inferences from the data collected in the nursing facilities. Frequent use is made of actual examples and quotations from workers and managers interviewed during the field research. Actual quotes from workers or managers are italicized for clarity.

High Quality Leadership and Management

Snapshot of leadership in a high turnover home: "*Apparently the previous administrator didn't speak to people. He just walked around the building and didn't speak to people, even the department heads.*" What happened to him? "*He was promoted, to the corporate office, to be president of a division.*" *- Administrator*

Snapshot of leadership in a low-turnover home: "*The staff will be a mirror of the supervisors. If the supervisors treat the staff with dignity and respect, and hold them accountable, that empowers people." - Administrator*

Strong positive leadership was the first necessity for a high-quality, strong-culture, low-turnover nursing facility, in the observations gathered here. No one person can turn a place around or make or break a place alone, but that person can be the spearhead of a team, and can gather good people around and hold them accountable. In typical nursing facilities, there are no more than one or two key leadership positions, in most cases, though other key roles are also important. The administrator and director of nursing are the two major people to whom most staff look for leadership, both by example and by conscious management tactics. In rare cases, a human resources director or a staff development person or a key long-term nursing employee can also be a crucial "link" in a chain of culture and practice that serves to attract and retain employees.

The elements of leadership and management found to be most crucial in this research can be summarized as mission and culture, setting priorities and developing trust, accountability and standards, communication, commitment, and providing leadership at all levels, including supervisory.

Mission and culture

In previous work the investigator identified a factor called "philosophy of management" as a crucial factor in yielding high quality outcomes in nursing facilities. In looking for concrete manifestations of such a philosophy of management in the high-turnover and low-turnover homes, a logical place to start was with the mission statement, or the goals of the organization if not a formal 'mission.' In each facility, top managers were asked about the mission of their facility, and how it was reflected in practice, if it was. In one low-turnover facility, not only the administrator but the Director of Nursing, the staff development director, and the human resource director actually brought their mission up before they were asked about it. The administrator said,

"Our mission is to be Christ-centered, community-centered, resident centered and staff centered. We do daily devotions and church services on Sunday. There is a "STAR" program-- for Steps Along the Road (like the Good Samaritan)-- for staff. We have a part-time chaplain, who conducts stand up devotions, short ones, on the floor, for staff or residents. We start all meetings with devotions and prayer, and morning report, and committee meetings. We look at the residents and families as a whole, and pray with them, talk with them, spend time with them, talk about Christ, talk about difficult times."

While not everyone would feel comfortable in such a religious environment, it was clear that the religious mission imbued the caring work of the facility. The Director of Nursing said in a separate interview, "*Our mission is to provide services for the elderly, to minister holistically, spiritually, medically, socially, everything. I hope this is carried into the practice here. We have a saying, "In Christ's love, everyone is someone," and that is especially true for CNAs. I believe it."* Closer to the front lines, staff stated the mission more simply, as for example, "*Our mission is to share God's love, in word and deed by providing care..."* Most staff wore nametags that included a summary of the facility's mission, including the phrase, 'In Christ's love, everyone is someone.'

I asked about hiring practices and their relationship to the mission. The HR director said, *"We talk about the mission a lot in interviews. We are limited in what we can ask, but we let them know we expect them to act in a Christian way, with a lot of respect. And of course we try to act in that way toward them. If we act that way toward the staff they will act that way toward the residents.* When staff were asked about whether the religious environment made them uncomfortable, no one said it did. One said, "I'm a Catholic and I believe in the same thing, just not the same church." Another less religious nurse said in response to the question of her comfort level, "*This is the best place I have worked. It is clean, they treat people decently, they are more concerned about the residents. I quit a job at Facility X, where the administration did not treat the residents well. I couldn't take it. Here I feel I can live up to my standards."*

In contrast, in a high-turnover facility, neither the administrator nor director of nursing had a response for the question about their facility's mission or goals. The administrator eventually found a formal mission statement after 15 minutes of searching in a file drawer. The mission statement spoke of delivering "high quality cost effective care in a cost effective manner." Employees interviewed in this facility had a sense of the importance of cost issues, but not as much of what 'high quality' meant. So in part the mission statement was implemented in the facility's day-to-day operation, but it did not

appear to guide employees in any sense of a goal greater than themselves. This is not to say the people there did not care about residents, simply that they did not have a common way to talk about their work together, or as larger than themselves.

Another way that facility mission or culture was expressed was in how the leaders handle difficult or emotional moments, particularly deaths in the facility. In this area, culture in some facilities was being changed to honor the person who has died. In a traditional facility, very often death was either covered over (sometimes a body is literally hidden in a special kind of stretcher and rolled out to an ambulance while everyone's doors are closed), or spoken of only in hushed tones as word goes around. In contrast, in one low-turnover facility, the director said, "*We also do bedside memorials, a service then and there when someone dies. The family can participate. If someone dies at 2 am, very often people need to have a service at that time. It provides a nice closing for staff. Of course we also have a monthly service for those who have passed away. But if someone dies at 2 am, it is more traumatic. The nurses can conduct them. Different people can. I will do it as the administrator, if I am there."* These small things made a big difference to employees. One of the hardest things about working in a nursing facility was the death of your patients or residents, people for whom you have cared and with whom you have had a relationship. To have that person's life honored, and your part in it recognized and valued, was a healing process, according to staff interviewed in this study.

Sometimes administrative staff and managers themselves have gone through a personal experience or transformation that led them to take on this kind of job. This often helps them communicate with others and convey a sense of mission and importance of the work. One director said, " *I had some experiences that changed my philosophy. I was truly honestly committed to making a difference in the community and my life, and I thought I would, here. We know who we serve from the resident standpoint, and we know the staff, and we work with the community, all the families. No one wants to be in a nursing home, so there is a sense of the underdog in it too."*

Culture communicates itself to residents and family members too, and can help attract or repel staff. One RN who had become the staff developer said of her low-turnover facility, "*I came here six years ago, because her grandmother was a resident and was dying. I was impressed with the compassion. At the time I worked for a for-profit. I thought I could make a difference. Here it is focused less on making money, and not the same goals."*

Setting Priorities, Developing Trust

One administrator, who is new to a bad situation, describes his approach as one of management by being a member of the staff. *"I spend as much time as I can on the floors. I am a soldier, not a general… We should spend our money on more money for staff, not on agency or corporate offices or furnishings."* Every day decisions are made in nursing facilities that reveal the priorities of the leader more loudly than anything he or she says. Building trustful relationships is a challenge in any organization, but particularly in nursing facilities with poor histories, and with employees who have little positive experience with bosses or supervisors. One administrator described a turnaround setting where gaining staff trust (and community trust) was essential to his success.

"In New Mexico I went from 20 deficiencies to zero deficiencies in 1.5 years, and kept it for two consecutive years. That was 80 beds, so there was more time. The New Mexico facility, if you were white, you were not trusted. It was a poor community. They had $10,000 in the bank, one private pay patient, 1 Medicare patient and all the rest Medicaid. I had to buy the community back in. I told

the staff my plan. I wanted them to help out on indirect costs. I put the ball in their court. They had to be satisfied as well as the facility. When I left, the bank account was up to $750,000. The staff trusts you (or not). You can accomplish anything you want if the staff trust you."

Accountability and Standards

Strong leaders emphasized that their job was to create accountability as well as to empower staff. They did not try to be liked by everyone, although good ones often were. One administrator recalled his arrival in a facility: *"I wanted to 'listen to the staff.' This staff takes pride in the facility. So many staff are 'bleacher people,' they sit in the stands and point, but do not change themselves. They are not accountable on attendance or anything. The first month I came here, I took a beating. I required and enforced attendance. But you have to get it."*

Good managers hold staff accountable, but do not give up on them when they err. "*The staff is more devoted to the residents. Human beings make mistakes. We have to be proactive, and focus on correcting them. Punitive practices don't work. They will not change people and they will drive people out of the industry. Good people are driven out because they can do a lot of other things."* This director of nursing was able to keep people and still keep standards high.

Another administrator in a low turnover home was very realistic, but uncompromising on standards of care. She also saw the link between care standards and retention. *"You have good aides. And bad aides. You have to hold people accountable to get a stable staff. You have to hold to standards, or the good people take on extra. You have to make that clear. I changed the Director of Nursing here. I hold them to the right thing. I want everyone brought up to standards. We have to decide what our standards are. The state's are only a minimum."*

CNAs were troubled by poor care given by other staff, and they held managers accountable. *"I enjoy being a CNA. I just want people to be… to give them the full benefit. This is what I want. If it changed I would stay permanently. I will be looking at another facility pretty soon."* Where does the responsibility lie? "*I don't know. The bosses, or the coordinators here. The AM shift is just leaving them for the PM shift. The first shift should… they should be taken care of. When that happens, you have a lot of work to do, even with 10 residents. <u>The boss or owner needs to get on top of these people!</u>"*

Poor quality care is not hard to observe, even for a non-expert. In one high-turnover facility on the evening shift, the researcher observed care for one hour on the evening shift, sitting near a nurses' station in a public area, and describes here only one example of a person whose care was clearly not adequate. If the administrator, manager, or director of nurses were on the floors regularly, it seemed that someone should have noticed this individual. Even a charge nurse presumably could have been responsible to take care of several of these issues. These concerns had not arisen in one shift or one day, but over a good deal of time. The researcher's field notes follow: "*Observed a woman in early stages of dementia, dressed in stained and soiled shirt with food spilled on it (but not recently, it was long dried and in several layers). Her fingernails had not been cut in several months and were extremely long and dirty. Her teeth were unbrushed and she had numerous 2-inch whiskers sprouting from her chin."* While these are only external grooming observations, they do not lead to confidence in the quality of clinical care. In this case, as in most cases of poor care, the researcher would identify not only a failure of nursing staff, but also of leadership and management.

Communication

Regular communication across shifts and units is a sign of a stronger and more communicative culture, where staff members feel they do matter to the leaders of the organization. Good managers try to learn what their staff members are feeling, especially front-line staff. That means talking to them, walking the floors, helping them, and using tools like surveys. They know that pride in the job is crucial to getting a good job done. "*We did a survey, and asked people if they were proud of being a CNA. One-third said they were proud of it, and two-thirds said they were NOT proud. That is a problem! People work here because of their hearts*..." He learned that he had to do more to help people feel proud of the work they did, and instituted a recognition program after the survey.

It's hard to explain how isolating working a nursing facility can be, especially for those on non-daytime shifts. Even for day shift workers, if administrators or nursing directors are mostly in their offices, most staff rarely see them. In contrast, one administrator explained, "*I met with each staff member when I first came here, for fifteen minutes each. I wanted to get to know each individual. I asked them all if there were one thing they could change, what would it be. I talked to all of them.*" Then he held a meeting and explained how he was going to act on the suggestions he had received. In contrast, in a high-turnover home where three nursing staff on the 11 to 7 shift were interviewed, two of them had never met the administrator or the director of nursing, despite at least a year of service.

Often problems in nursing facilities arise because of a lack of communication between shifts or units. This is particular true when changes are made. For example, one long-term aide in a high turnover facility had just quit because the shift hours were changed by 45 minutes in the am and the division of duties between overnight and day shifts on the 'get ups' was not well handled. They were expected to do the same work with 45 minutes less, but could still not start getting people up before 5 AM, which was the same time they started before. This issue could probably have been worked out with an effective problem resolution process or better communication between supervisors or shift managers, and a long-term employee would have been retained.

Consistence and communication are linked. In one facility, the scheduler and HR persons both explained that they had a system for giving out pay increases and assignments that was viewed as very consistent by staff, because of a union contract. In the two unionized facilities, at least some regular communication between workers and managers was scheduled to happen. While having a union could contribute to lower turnover (and does on average), this was one case where a concrete practice existed due to unionization that increased employees' sense of fairness.

Commitment and Longevity

One way that managers and leaders develop and express their commitment is by staying in the work of nursing care. At one low turnover facility, the 10 department heads had a total of 147 years of service, or on average almost 15 years' each. At another, the administrator with 14 years' experience was one of the more recent arrivals on the senior staff, the most senior of whom had been working the facility nearly 35 years. This was very different from high turnover places, where in three of the four facilities visited, the administrator had been in place less than six months, and very often other leadership staff had changed frequently as well. Longevity was no guarantee of good quality in a manager, of course, but there was a striking difference in short and long-term career patterns. The one exception was that in one non-profit chain, administrators were consciously moved from smaller to larger facilities as they learned their jobs, and were felt to be able to handle larger responsibilities. So a newer-service administrator was interviewed in a low-turnover facility, in that case and for that reason.

Managers did not always have to have long service to be good at making necessary change. Sometimes a non-traditional background was useful. One administrator of a high-turnover facility, on the job for only 90 days, had worked for five companies and the Catholic Church in the last seven years, and had parted ways with all of them. He might have been another short-termer, by most odds. But he had a chance of succeeding, perhaps because he knew what did not work. Another administrator with long service had started his work life as a drama student waiting tables, and one of his customers turned out to be a nursing facility owner. He had recruited him fifteen years earlier and trained him as an administrator. This person also had unorthodox views about nursing care and staff management, but they were working well in the facility he was administering.

Commitment was another value that emanated from the top down. On administrator explained the value of staff stability to good care and to building a strong culture. He challenged everyone to make a serious commitment to stay with the facility and reorganize the care systems. "*If there is a contained neighborhood with 20 residents, the staff is stable, they know their needs. I told them in my meetings with them, managers as well, to "commit or quit." If they can't commit, I can understand that, but they need to move on. We need to change for the better. Best of luck, but you have to quit or buy in."*

Leadership at All Levels

The change process was not easy, and many nursing facilities required dramatic changes to improve their performance. New administrators and DONs came to good and poor quality homes all the time, and had to take on the challenge of making positive change. That might have meant that some people were required to leave, but it also meant that others must have had a reason to stay, and learned to feel good about the work they were doing. One example of a manager showing commitment to staff well being was the administrator quoted below who, as part of a turnaround, worked on improving safety for staff and for residents. Even for such a positive goal, not everyone approved. But in the end it appeared to have worked, he said, because he demonstrated positive concern for the workers and residents through his investment in the tools they needed to do the job safely.

> *I had to look at who we were hiring. What were we getting for applications? The staff had lots of problems in life, and this was consistent.... We created our own turnover. We took back the NA training, and we needed to build up the staff internally… We made it worker friendly as far as safety. It was the first long term care facility to be a total lift-free environment. I was spending $500,000 a year on workers' comp. I got a safety specialist in once a week. I got 17 lifts, state of the art. I integrated them with scales and bathing. The staff hated it at first. I had tough aides, who would not buy in. By the end my workers' comp was down to $17,000, and the aides would take people on tours of the facility, people like you who came. They were my strongest supporters. You have to create pride…*

Managers also had to allow room for innovation and creativity. One LPN explained, "*I wear bunny ears to work on Easter and the residents love it. This year I didn't wear my bunny tail because we have a new DON and I didn't know how it would go over—but I always wear bright clothes when I can [on casual Fridays], because the residents look forward to my sparkles and t-shirts.*" One resident said, voluntarily and out of the hearing of this nurse, "*She lifts up my spirits whenever I see her*!" Yet even a new nursing director's presence had meant that she was less free and more worried about being her true "self," even though she knew residents liked this.

The Supervisory Level: What Makes a Good Supervisor?

> *"Nurses were not meant to be supervisors. They are always saying, I didn't go to school for that."* -- Administrator in a high-turnover facility
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> *"I try to get the licensed people to do write ups but they won't. Why not give it to the CNAs? The licensed nurses aren't really supervisors. At the first [meeting I held), the CNAs and Housekeeping were saying, "We don't have any supervisors." This one, who is really outspoken and mouthy, she said it. And they all agreed. I told the licensed nurses, this is really sad. They are begging for you to be their supervisors."*—Administrator in a high turnover facility
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> *"I am not a shouter. I get pissed, when the charge nurses do certain stupid things. I'm lucky if they are passing meds right. How can they be supervisors? They are getting younger and younger, and they party with the CNAs, and expect they can be friends. The next day they tell them to do something, and they won't do a thing. I tell them not to do that. They have to be respected…"* –Administrator in a high-turnover facility
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> *"I try to keep good CNAs."* How? "*By compliments and positive encouragement, not talking down to them. I make them feel important. I make them feel what they do is valuable. I say thank you at the end of the day, when I do rounds at 10 pm. I'll say, the unit looks nice, I've noticed.*" Have you noticed changes in the CNAs? "*They want to do better. I try to say to them, 'You know, when you were off yesterday, so and so didn't look as nice.' It makes a big difference to them… It's even at the professional level. When [the Administrator] comes down, and says 'Thank you.' It's not all the time, but the recognition…"* – Charge nurse RN in a low-turnover unit in a high-turnover facility

One nursing assistant in a high turnover facility spoke of the problems it caused her when a supervisor did not do her or his job with other CNAs. *"We could use some better employers."* What makes a good employer, or good supervisor, she was asked. *"Abide by the rules, and be stern. Make sure people do their jobs. Put your foot down sometimes. They have authority, but they don't use it…*" Why is it a problem for you as a CNA if the supervisors don't do their jobs, the researcher asked. *"When other people call in, that's a problem. Some people come and go, sometimes because the supervisors don't know how to talk to people—as if they are not human, as if we don't mean anything. Sometimes they can't take the shame of that."* She explained that if someone else did a poor job with a resident she was caring for, then she had to deal with the bad effects on the resident when she returned for her shift. The resident, in a dementia unit, was angry and stubborn, she said, if someone had been mean to the person. *"They may not know how to communicate, but they know when someone is treating them badly. And then it takes me all shift to get them calm again."*

In another high-turnover facility many miles away, an aide on the evening shift said almost the same thing about the need for managers to uphold standards for all employees.

"*It's a pretty good facility, but they should pay a little more attention. It would help out a lot. Especially when you ask for help, and you do not get help. I don't think I will be here too long. You need to have support. It's really stressful… I like being a CNA That's what I'm here for, to help people, to help these older people. Not to see them not getting their needs,*

what they need. If they are soaking wet and dirty all the time, it's frustrating." (Emphasis indicates spoken intensity)

This problem was found in this study to be endemic to nursing facilities. Nearly everyone agrees that, "*Nurses are not taught to be supervisors. They take their boards and they go on the floors. You learn, over time, like I have, supervisor skills. But they are not taught them."* Add in the complex dynamics of age, race, and class (often nurses are younger, most often white and native-born or Filipino, and nearly always have more formal education than those they are supervising, but may have much less actual experience in nursing or taking care of disabled or elderly people), and you have a potential disaster that is already happening in most US nursing facilities. Most CNAs have little respect for their supervisors and most supervisors little respect for their CNAs. One administrator was quoted above as calling some CNAs "wannabes, who think they are MORE than a CNA" Even people who have been CNAs don't always respect the workers. Where there are exceptions, they are relatively rare, at least in this study.

Another aide explained what made a good supervisor. *"We have a good nurse,"* she said of her current charge nurse. What makes a good nurse? *"If they are open and can talk to you, give you compliments when they are due*." Note that the aides do not want 'empty' compliments, or else they feel it is insincere or their work is not really being noticed. *"Don't get me wrong*," says one CNA in a group, the voice of realism with four years' experience at the facility *"Some of them really have attitudes." "Yes, they treat you as if they are a whole lot better than you because you are ONLY an AIDE,"* says another person, and they all agree. *"Everybody is different," says the first CNA "Some don't want to be there either. Some of them are lazy too."*

One aide answered, when asked, how could the job be better? "*They could help by just hiring good people. I had to work with some really bad people at the beginning. I walked off the floor crying, because of how I was treated by them … the first floor has good teamwork now. We help each other, we eat together, and we go back and forth together."* Another new CNA described a good nurse supervisor as "*when they are our support, and they understand what we're going through and our frustration, and they show us how to treat the patients and how to do things the right way. I would stay longer if the employer has more CNAs to help out and more communication and support for me. We need help dealing with these challenges."*

The most common answer about what makes a good supervisor on the units was a willingness to share the work, including a willingness to get one's hands dirty. On DON said, " *They are good if they are very involved with resident direct care. They need teaching and reinforcement. They have to be able to show the aides the right way. They have to be able to make the aide feel a partner, whose opinion is valued. Nurses also like the patient contact. 95percent like one unit as opposed to moving around, but I move them around*." Another administrator, newly hired at a high-turnover facility, said, *"I tell the staff, I spend more time with you than with my own family. I will respect you and in return I demand respect. If I can pick up a wad of poop off the floor, you can too. If I see it, I'm not going to call for someone else to come get it. And, I will reprimand you behind closed doors. I will treat you the way I want to be treated, and I expect the same*." This was in contrast to supervisors who dressed employees down in front of others, and embarrassed or shamed them, sometimes to the point where they would leave and never return.

The second most common agreement about what made a good supervisor was that the good nurses had faith in the CNAs. This was a contrast to the many places where nurses complained of constantly looking over the shoulders of or going 'behind' CNAs to remind them of their duties. One aide said, "*The charge nurses on this floor are really good. She talks to us at our level. She does not try to be the heavy boss. She listens to us. We respect her and she respects us. She believes in us, she knows that we're OK*."

In general, managers at high and low turnover facilities agreed about the dire need for management and leadership training for their charge nurses and LPN supervisors. One administrator said, *"I would like to have an RN working with the charge nurses. The LPNs have different training. They want a lot of direction. Their problem solving skills are an issue. They make good assessments, but want to check in. They don't want the responsibility for a decision. They don't have the managerial skills of the nurses; they don't get the training they need. There is a great need. A couple have been in management positions."* This was a universal concern among the interviewees for this study.

One Person Can Make a Difference

Good supervisors in this study actually thought carefully about how to retain their staff. They could do this even in a generally unfriendly environment. In one high-turnover facility, the researcher stumbled on a low-turnover unit, a middle-stage dementia unit where the staff had all been there for more than one year, and many for longer. The reason? There was one key charge nurse, who described herself as someone who believed "*all people are equally valuable, we just have different jobs to do*." The staff who worked with her had her home phone number and were welcome to call her if there was a problem. They always phoned her if they had to be out, and made arrangements to be covered, avoiding the general facility scheduling system, which had been described as a 'nightmare' to the researcher. They felt committed to her and to the residents on the unit. How did she do it? She is the nurse last quoted in the text box at the beginning of this section.

Summary

In summary, good leadership and management were found to be essential to apparently well-functioning, demonstrably low-turnover facilities in this study. While there is no single quality that defined a good leader or manager, someone with a strong vision or mission and sense of goal, someone who set standards and kept others accountable, someone who listened to others and spent time on the floors, someone who valued the contributions and work of others but also demanded commitment and high performance, and someone who tried to create a chain of positive supervision all the way to the front lines, as well as being open to new and non-traditional ideas, seemed to be someone who would have a good chance of succeeding in developing a low-turnover facility.

5.4 Valuing and Respecting Caregivers and Their Needs

Valuing and respecting caregivers and understanding and responding to their needs was the second quality found in this study in every low-turnover facility. This second finding was linked to the first. Good leaders and managers were certain to value and respect the nursing staff, especially the direct caregivers, and their needs. This became obvious in certain clear contrasts between high and low-turnover facilities.

5.4.1 Recognition

"I ask them why they are interested in the job. If they say 'the pay,' I am not so interested, because I've done that job and I know you're not paid what you're worth. It's a grunt job. If that's your reason, you won't last." -- HR director, *high turnover facility*

"We recognize years of service, 1, 3, 5, 10, 15, and 20. I hand out free lunch tickets, or get pizza or donuts from the nurses, to say thank you. In June we will have a luncheon for National Nurses' Aides Week. But I think they should do more. At two weeks, on a payday you should get something, at four weeks, something else, at 120 days, a T- shirt. But they should do more. Now at one year you get a pin. But that's not enough. It could be a different person each time, giving it to you. At six months you could get earrings-- the women are easier than the guys. But you could get popcorn and a movie pass. Little incentives, appreciation."—HR director, low turnover facility

Outside the Director of Nursing's office there is a display cabinet, the [Facility Name] Hall of Fame. It has names of all workers who have been working there more than four years. The names are written in large black ink letters on colored construction paper and grouped by seniority-- with different colors representing different departments. The first group is from five to ten years (those with more than four years are listed in the lower left hand corner, to be added in the next year)... and there are 23 employees listed, all but five in nursing. Then there is 10 to 15 years and there are 10 employees listed, and 15 to 20 years, where there are 17 listed, most in nursing in all these categories. In over 20 years there are 6 people, 3 from 20 to 25, 1 from 25 to 30, 1 from 30 to 35, and 1 from 35 to 40! "We proudly honor our long term employees," is the statement at the top of the display.

--Field notes from researcher at low turnover Facility in Kansas

In addition, in this facility was found a wall display with new staff and new residents. The new staff bulletin board had Polaroid photos of five employees, each attached to a "welcome" sheet where they have filled out their name and where they are from, as well as something they want others to know about them. One person had written, "I am married to the most wonderful woman in the world... tell her I said so" and another "I like soccer and reading." The resident bulletin board has longer two page typed introductions, along with photos of the residents. It was a simple thing, but it was not evident in any other facility visited for this study. Another feature of this facility were posters of art by children of employees, often portraying an elder person that they know. The researcher later realized this is part of a planned activity that involves staff as well as residents. Some of the pictures are quite powerful, both in color and in whom they portray, such as people in wheelchairs... the residents' paintings tended to be landscapes.

Besides all this, the HR director explained, "*I have a staff appreciation and retention committee, which is not about recruitment, but has workers from each department. They do special things, small things. On Easter, they had drawings, and candy, and if you had a certain number in your candy basket, you won a price. We spent money two years on a Christmas party and prizes. For nursing home week, we had games, and roulette. We do share it with the safety committee*."

These examples, as well as others cited throughout the study, seemed to speak for themselves about the power of positive recognition and feedback of people's work. In the high-turnover facilities, there was a sense of anonymity about the staff, who seemed to come and go both daily and at longer intervals, very quickly. At the facility described above, staff recognition was almost over-determined—new staff were recognized, senior staff were recognized, staff children were recognized, and this was all evident just on a few walls. It is not surprising to find that the managers of this facility thought consciously about the value of the workers and residents, and how to express that in multiple visible ways. But it was a rare thing to see it so openly acknowledged.

5.4.2 Scheduling

Schedules, as much as any other single item in a nurse or aide's life besides her assignment, determined what her life will be like, both at and outside of work. One of the biggest areas of contention, and a problem area for attendance and for continuous employment, were problems related to scheduling and showing up at mutually agreeable times. Clearly one problem was that this work is required to be done 24 hours a day, 7 days a week, 365 days a year. No matter what was going on in anyone's life, the nursing facility had to be staffed and someone had to be in charge. Failures to meet management expectations of showing up every single day as scheduled were probably the most common reason for nursing staff discharge, rather than a failure to do the work well.

Yet despite how vital this was everywhere, the researcher found quite distinct practices in high and low-turnover facilities. In some places the scheduling was almost random, or delegated to a receptionist, as if it were just a matter of placing people's names on a piece of paper. Yet, scheduling was anything but this. Unions had spent many days negotiating scheduling issues in nursing facility negotiations. There were questions of holidays, vacations, overtime, regular work days, patterns of work days, notice of schedule changes by the employer and the employees, weekends (or weekends off, that rare commodity available mainly to a few managers), and many more. Where no union existed, these things were decided by a variety of people and frequently changed.

In the facilities with low turnover, scheduling was usually resolved in some way that most people felt to be satisfactory, with sufficient notice, and patterns, so that people could rely on it. But even there, problems arose because of the circumstances of nursing facility employees' lives—inconvenient school holidays, sick children, immigration or legal problems, and many other issues. In the high-turnover facilities, schedules were more likely to be seen by everyone as chaotic, a place where you had to get your own as best you could, in a world of dog-eat-dog.

Nursing facility organizational research literature has suggested that self-scheduling is the preferred way to resolve scheduling for CNAs. The most common way in practice, as observed here, was to give the job to one individual, who then became the most harassed and at the same time the most powerful person in the facility. All the high-turnover facilities had a full-time scheduler to take care of this huge area of responsibility. Imagine what happened when the scheduler scheduled herself off! Following are some examples of contrasting scheduling experiences in high and low-turnover facilities:

The Inflexible schedule: "*This is my set schedule that you need to work*," said one DON, "*because there are days that nobody wants to work. Every other weekend, everyone would like to have that. If once posted they need a day off, they have to find their own replacement, put it in writing, and sign it, so they can be accountable… I try to post it at least a week ahead."* DON in a high turnover facility

The Flexible Schedule: *"We try to be flexible with people's schedules. If they need time off, for a doctor's appointment, or a sick child, and someone else wants to work it, we don't kick about the overtime. It all works out, and it's more important for them to be able to take care of things in their lives."* -- Administrator in a low turnover facility

Complexity and Ambiguity: "*I think they should be careful, about being too strict on absenteeism. These are single mothers with three children, middle aged, and single. They try to be there, but you have to sometimes cut days away. They have this attitude here; your personal life is not my problem. You being here is my problem. Well, for 75percent that may be true, but with some people, you have to be flexible enough and do the best you can without lowering expectations. With all the break-up of the home out there, the workplace should feel secure. You should not be anxious that you are going to get the cold shoulder if you call in."* – HR director in a low turnover facility.

Favoritism: "*She (the charge nurse) likes K---, because she worked with her at another facility. Now K--- says she is pregnant and can't do any lifting. There IS no light duty here. I used to work when I was pregnant too, until I was eight months pregnant. I used to do doubles all the time. Now I don't volunteer to do it, since she started her attitude. She ain't going to give us no more Saturdays and Sundays. The kids go to school Monday through Saturday, so weekends are the main time to spend with them. I requested July 4 off one and a half months ahead, and she didn't give it to me."* - CNA in a high turnover facility

So the first issue about schedules was whether they were rigid or flexible. If they were flexible it did not mean there was no schedule, just that people's complex personal issues could be addressed without a huge problem in most cases. The flexibly scheduled facilities had the least absenteeism and turnover, as reported by managers. The rigidly scheduled ones all had difficulty with this, and tended to become more rigid in response. A second issue about scheduling was how absences were handled, whether planned or unplanned. Most facilities in this study had stopped using agency staff, because they found them both to be more expensive and less reliable than was acceptable. "Even the agency staff call in," lamented one DON. And one administrator said, "We spent $80,000 on agency staff last year. It was bankrupting us." But without agency costs, the facility must spend some of that money on overtime to fill in empty slots, or else go continually short staffed (see below). As one administrator above said, he allowed overtime and this gave him the flexibility he needed. In other cases where no overtime could be incurred, the schedule continued full of holes. Even a bad attitude by a manager can result in employees' refusing to volunteer for overtime, as seen above.

A third common issue or concern was who the scheduler was, and how most people related to that person. If the scheduler appeared to act with favoritism, the facility's morale sank quickly to the depths. If the scheduler was rigid, turnover and absenteeism became even more common. No two low-turnover homes staffed exactly the same way, but it was more common in low-turnover homes to have a regular schedule that was always posted well in advance, and to have a voluntary sign-up sheet for additional hours. Many workers, because of their need for additional income, were willing to work extra shifts when they could. Many immigrant workers were sending money home and actively sought out extra shifts. Also, many workers had more than one job. For example, one LVN had worked at another nursing facility as a weekend relief worker for seven years. She worked every other weekend at her first job, and then the weekends in between at her second job, plus all the days in between that she could. Some facilities offered self-scheduling, but only at the unit level and

because a particular charge nurse was willing to do this. In those cases, workers felt more responsible to each other, and to their residents, to come to work on the shifts they had committed to work.

Scheduling was also used as a punishment. One 23-year-old male CNA interviewed. was approaching his first anniversary date with a high turnover home. He worked the second shift, which did not work well with his wife and three children, who were 4, 3, and 1. Sometimes he had to be absent to take them to medical appointments or to cover for his wife when her employer abruptly changed her schedule. He had put in an application for the first shift, or day shift, and had been told it would be honored when there was an opening, but had just heard that two new employees with the same credentials had been given day jobs. When he asked the scheduler why this was the case, she told him that his absenteeism record was a problem and so he was not being moved. This is a vicious cycle, because at least in theory his absenteeism was aggravated by being on the second shift, and would continue until he got a first shift job. Using scheduling as a form of discipline was a hated practice among CNAs.

Scheduling was complicated by transportation and childcare issues. At two facilities visited in two different states, no bus service was available after 11 pm. So in one case employees had to clock out and be on the bus stop outside by 10:30 pm, and therefore lost pay (and the facility lost coverage) because of transportation problems. Workers whose buses got them to the job early were forbidden from clocking in and working, however. One aide was forced to quit because her sister's car broke down, and she had no alternative source of a ride. In another example, a CNA said, "*I am partly working toward my LVN. It's really in my heart to do. If there was help with childcare, and hours changed to accommodate… a lot more people would go into nursing. I heard that in some cases because the nurses need to get their kids to day care, they will accommodate the nurses, and change hours for mothers. You can't get them into day care and get here before 8 am*." Remember that most day shifts started at 6:30 or 7:00 AM for nursing employees.

5.4.3 Respect vs. Contempt for Caregivers

> Q: What were the issues in the union drive? -- Researcher
> A: "*Money and respect. Actually, more respect.*" *-- Administrator*

In high turnover facilities, attitudes toward the paraprofessional staff were quite negative, on the whole. This was in contrast with low-turnover facilities where much more egalitarian language and approaches were used. Here are three examples of very negative attitudes toward CNAs in particular:

"Some CNAs were scared [of having AIDS patients in the building]. I had to ask them, "Are you planning on having sex with the individual? Because if you are, you'll get fired anyway. Or, are you going to be drinking breast milk?" It just doesn't happen in nursing homes. I have a very low tolerance for stupidity." -- Administrator in a high turnover nursing facility

"I look for how much they brag on themselves. Usually it means they are covering up for bad performance. I try if I can to get a good picture of their attendance at the previous place. I look for whether they are polite in the interview, because then I hope they will be polite with the residents. I look for their appearance and mannerisms."-- Director of Nursing, high turnover facility

"I will tell you one thing, though, from past experience. When I see a CNA with a resume, that's a dead giveaway." To what? *"They are a wannabe. In their mind they are MORE than just a CNA. And that person will cause you trouble on the floors. You wouldn't hire someone who came in a uniform for the same reason. They think 'too much' of themselves."* – Administrator in a high turnover facility.

These attitudes were in start contrast to those reported above, either at the religious facility, or by the positive supervisor. One RN who had worked as a CNA before her nursing training explained that the attitude toward direct hands-on care giving was not only expressed in the professional world, but also was reflected in her family: "*CNA is the killer profession. I was an aide for two years before I went to school. I was physically tired all the time. They start at ten-something (dollars), but then they don't go up (in wages). And there is no prestige for the CNA. My father was embarrassed when I went to work as a CNA, as if I had become a stripper or something. It's physical work, toileting, and other things people don't usually like to do...."*

VALUING CAREGIVERS AND THEIR SPECIAL GIFTS: An Example

Feeling and Being Needed: *"But people really need you here. I bring lotions to work for them, and powder… little soaps and perfumes, mints and aftershave for the men. I find hair bands for the ones with long hair. They know that I do it. I am not supposed to bring them anything. A lot of the women like that, to smell better, and a lot of the men, too. I just do it because I want to. I don't ask anything from anybody for it. I don't take anything. It's a gift. It helps me to do my job better. If I can make them feel comfortable, then I'm comfortable…"-- a C.N.A*

5.4.4 Lives Outside of Work

Another factor that distinguished low turnover from high-turnover facilities was an understanding by one or more key managers and leaders of something of what employees' lives were like outside of work, especially CNAs' lives. Since Tellis-Nayak's article on the home lives of nursing aides (1989), and with the exception of a few ethnographies, little has been written that accurately portrays the difficulty of these low-wage workers' lives outside of work, at least little that has made an impact apparently on the nursing facility managers' consciousness. Here are but a few examples:

"I couldn't find anything else, so I came back to be a CNA. You make a lot more money in the Bay Area. I have four kids, who are 19, 15, 10, and 4. I worked since February on the PM shift. I worked days while I was in school, on the first floor. There are some harder floors. If you can work first and second, you can work third. The residents are more alert, which means they are more on their lights. But you can talk with them, laugh with them, and most are ambulatory. Once you work up here, you love this floor. I got blessed." --- A CNA with difficult home circumstances

The night shift: " *I am on PMs. I used to do the night shift, but my children were having a hard time. The youngest was keeping them up at night and they were too tired to go to school. They still have to watch him, but he was not going to sleep. He is only three years old. But he would wait up for me to come home and not sleep." How old is the oldest? "She's 27. She has to take care of all the younger ones."* – Certified Nursing Assistant in a low-turnover home.

Lack of future: *"I don't want to be a CNA all my life. I'm good with the people, and caring, and considerate. I am compassionate. I want for them to be treated… like you would your parents."*

Ambition discouraged: "*When we think of medical or think college, they tell us we can't do it, especially as a single parent. I have three boys, 13, 12, and 5. But they need to let people know it's not impossible. It's a really faraway dream. When I got my GED, I put a lot of bills on the back burner, but you need a house, electricity and water. There is lots of going to school during the day and working at night. I was gone at night, and when I was [home] I was grouchy. The kids give me a lot of encouragement. I am mostly leaving my kids alone though, and I don't like that".* – A CNA

Attachment to residents; dealing with death: "*It's hard work, physically and mentally. When you lose a patient—I used to go to the funeral home. Now I don't. It just tears you up. You get attached to these people, you can't help it."* Charge nurse LPN

"And sometimes, you have to deal with the death of someone. You don't want to see another one you care about, pass away. We lost one today." Were you close to him? "*Oh yes. I called him my chocolate man. He was in the hospital but I didn't know he was going to pass. His sons came, and we talked to them. They were nice, but some of the family are very rude to us*." Do you go to the funeral? "*No, it's kind of a family thing. We talk about him here, and that helps a little bit*."- CNA describing a death on her shift

Understanding the residents' experiences: "*If there were more staff, you would have time to know that person, to laugh and to love. How many people want a roommate 20 or 30 years from now? In college, what do you get to bring? Not much. But these are people with a life. In this facility, Organization S put its money into the resident's place. They are getting individualized rooms, semi-private rooms with walls, spacious, many to live in, and not a common area. The for-profits put their money into a plush environment that the families see, and it's awful where people live. Here, they have no chandeliers".* – RN, HR Director

5.4.5 The Workforce: The Vast Influence of the Immigrant Experience

It is impossible to write about the nursing facility workforce without writing about the immigrant experience. In the heart of suburban Kansas, at least half the workers interviewed were from Africa (Kenya, Ghana, and Nigeria, for the most part), Mexico or Central America, or the Philippines. Nurses too were often from Africa and the Philippines. The other half was local Anglo and African-American poor and working class individuals. In Wisconsin, workers from Africa, Central America, and the Philippines also were working in facilities, but the base population was African-American Wisconsin or Michigan born (for aides) and white Wisconsin born (for nurses). In California, the entire workforce was darker-skinned, with far more Chicano/a and Latin American workers as a percentage of the workforce, but apparently relatively few undocumented workers in nursing aide

jobs. Many Filipinas and a few Filipinos, and some African-Americans, filled the aide and nursing jobs. Most of the white women observed or interviewed were in management or RN jobs. In the rural community, most workers were local in their origins, but that was also true in the city community. It seemed these particular labor markets combined local and international markets, without ever becoming regional or national.

The workers from Africa were mostly students who had come to the US to study computers, engineering, or other technical subjects. Many of them were in college and were working in nursing facilities because the jobs were easy to get, and had long hours including night hours when classes were not taught. Ironically, most of them came from middle or upper class backgrounds in Africa. One man I interviewed spoke German, French, and English in addition to his native language. Others came from government employee families or occasionally a retail family where other sons or daughters were left to work in the family business. This made it especially hard for them to be treated as lower class or poor workers, which occurred during their nursing facility work experiences. They will certainly work in nursing facilities for as short a time as possible, but many had been there more than a year already. One had switched his major to nursing after seeing how many nursing jobs existed and how much more they paid in the US.

In California, Hmong workers interviewed were second-generation, born in the U.S. and just beginning formal schooling above high school. The Mexican and Central American workers had rarely finished high school in their own countries or in the US. Some US born Mexican-American workers had finished high school and hoped to be nurses, while more African-Americans were discouraged and said things like, "I wanted to be a nurse and this was as far as I got." Very few workers came from the Middle East or East Asia, but every facility employed Filipino nurses in this study. Some were working as CNAs or as medical technicians (CNAs who can give out medication) while they studied for their nursing tests or awaited test results. The Filipinos had to be sponsored by a nursing facility to get visas, and most had three-year contracts.

Most lived in a close-knit community with other Filipino nurses within walking distance of the facility. They were likely to work lots of overtime, and to send money back home. Most planned to stay, and to go to work at hospitals as soon as their contracts were up. Hospitals are not hiring from the Philippines just now, but nursing facilities are. Most of them have hospital backgrounds because there are virtually no nursing facilities in the Philippines. The facility may assign each one a Preceptor, most likely another Filipino nurse to help them make the transition. Why do they want to go to work in a hospital? "*I feel more like a nurse there. Here I feel like I'm babysitting old people*." What was your background in the hospital? "*Cardiac care. I had no dementia or geriatric training.*" One Filipino man had come to the U.S. with his RN wife, and the two later divorced. He had come to work in the same facility she did, and was working as the night supervising RN when he was interviewed. Will you go back to the Philippines? "*I have not seen my family for seven years. But yes, I will go back there when I retire, because someone will take care of me, even if I have no immediate family. I do not want to get old in the United States*," he said.

5.4.6 Summary

Valuing and respecting caregivers, as opposed to having contempt for them, not surprisingly resulted in stronger, more positive relationships and less turnover. Yet this seemed to be

very difficult for some people in the institutional culture of long-term care. For others, it seemed to come naturally, or through a lifetime of learning. In cases where administrators sometimes advanced people salary money if they needed a car or an emergency operation, workers stayed longer and felt more loyal. In cases where they were on their own, no matter what happened, and they were treated as interchangeable, they acted much more individualistically and from the managers' point of view, much less responsibly. Yet, as has been suggested, these individuals were not fundamentally different 'kinds of people' with different 'work ethics.' They were, however, acting in a different organizational and human setting, being treated differently and being trusted and valued at a much higher level.

5.5 Basic Positive Human Resource Policies: Wages, Benefits, Orientation, Training, Scheduling, etc.

At a High Turnover Facility:

"CNA vacancies, they are like a rotating door, that is always open." - Administrator

At a Low Turnover Facility:

"It's not just the pay scale; it takes a special kind of person." - CNA

5.5.1 Compensation

A labor economist would expect to find facilities with low turnover paying more than facilities with high turnover, and might expect workers to move to facilities with the highest wages and stay there. However, this did not appear to be the case in these paired comparisons. In Kansas, the high and low turnover facilities were paying very similar wages, with the high turnover facility paying more to start. In California this was also true at all sites.

Competition for workers on the basis of wages could be cutthroat in the nursing facility industry if there were no other reasons for people to stay at a facility. One administrator at a high turnover facility told me that the facility 'around the corner' had started 'paying for experience,' and offered up to $10.00 an hour to nursing assistants to start. This was clearly an attractive policy, since aides rarely feel they get credit for their experience. In contrast, her facility had been offering wages of $7.75 an hour to start, and she had raised them after her arrival three months earlier to $8.00 an hour, with an additional 50 cents after 90 days. But this was still far below the rival facility. Still, at the low turnover facility studied for this report, start rates for aides were between $8.00 and $9.00, not very different. One discouraged staff developer at a high-turnover facility said, *"Some three or four [CNAs] quit to go somewhere that pays more money. It's about money, even if it's not but a quarter*." Despite this perception on her part, workers noted that there were other reasons to leave this facility. Wages were an intelligible reason for leaving, but in the interviews, wages were not the issue in attracting workers.

Wages could be a good reason to leave a bad job, however. One administrator at a high turnover, low quality home complained that the facility around the corner had just '*stolen away my 'medication*

nurse' for $26 an hour, for an LVN! She called in at 5 am and said she wasn't coming in one day and never returned, but word got back to me through the grapevine about what had happened. That's more than we pay our RNs, we pay LVNs $18 an hour."

Facilities that raised wages over time were more likely to keep workers. This was true in the unionized facilities where annual percentage or flat increases were awarded by contract. This was also true in the low-turnover facilities where workers had earned regular increments over the years and now made more at their facility than they could at another new workplace. One worker at a high-turnover facility expressed her frustration when asked about the pay: *"It's not that great. We get 8.10 an hour, no shift differential. Then there's insurance, I pay part from my check, and then the co-pay too. And I've never taken a vacation in three years I've been here."* Why? *"I have nowhere to go. I never take no time off." What happens to your vacation pay? "They give me eight days of pay, sometime at the end of the year*." What would it take to bring more people into this kind of work? *"It would help bring more people in if they paid better. A lot of people leave because they find better paying jobs."* Is there any raise for seniority or experience? *"No, there is no kind of salary raises on any schedule. A brand new CNA gets the same 8.10 I get. And they can't do it as good."*

In California, the mandated wage pass-through legislation of the previous year seemed to have reduced complaints about insufficient funds to pay decent start rates, according to several administrators. In Wisconsin, one HR Director has 100 screened resumes to interview. Why? *"If I put up one poster in a bus stop, 300 people would come in. They just see the rate. It's 10.00 an hour, because we are union. That's the start rate. They all get the same raise, because we are union, too."* Yet workers still felt in every single state that they made too little money for the work they did. The entire industry was under-funded, in their view.

Some facilities offered shift differentials or weekend differentials. These had helped in the case of one HT facility to attract employees to those shifts, and to encourage others to work 'doubles' or extra weekend hours. "*Corporate sets pay scale. It's easier. We are very competitive with other facilities in the area. We start CNAs at 9.50 (an hour). This corporation began doing something, last year, that wasn't happening with the previous owners…. Shift differential and evening and night weekend bonus, all in nursing."* Some facilities offered bonuses to workers who signed up other workers, and many offered bonuses to new workers, ranging from $200 for a CNA to $1,000 for a licensed nurse. The worker usually had to stay employed between six months and a year to collect the full bonus. There were no consistent patterns that differed between high and low turnover facilities on shift differentials, or on bonuses, though lower-turnover facilities had far less need to offer bonuses to recruit workers, and fewer did. Bonuses could also have a demoralizing effect on longer-term employees, who did not receive bonuses and saw others come and go as soon as they fulfilled the minimum requirement.

While wages are important, most agreed, they were not determinative. *"If they drop out of college they can get a job here. But fast food pays as much as we do. We used to pay low, but now we pay $9.87 an hour to start. With any experience you are over $10.00. And then with shift differential you can get up to $12.00 or $13.00. It is still better than it was wage wise. My family, in southeastern Kansas, would die for these wages,"* said one HR director.

One former Director of Nursing commented that wages are not a sufficient reason to do the work, or to do it well, as many CNAs also noted. "*The people who do this work want to care for people. It's their calling. They still have to be able to enjoy their coworkers. [Fifteen years ago] we had nine*

older and middle-aged women, who worked part time to help with family expenses, not to support their families. They could come in an extra day here and there, they were committed. Now... they are retired. To get people to work extra shifts we pay a $25 shift bonus to CNAs, $40 a shift to nurses, plus time and a half, if they work an extra shift in their pay period. But then they are tired, and they take short cuts."

One CNA summed it up, explaining why he would not be a CNA long. "*It's hard to have a future in a CNA job. There are no benefits, no nothing. If there were retirement plans, or more unions. Every time you get a raise, PG and E shot up through the roof and gas got higher. Most have no medical benefits because family coverage is the full price. We really care about the patients. Seems like so much of a business now. Everybody helped out more in the past. Now they see it as a business instead of being more helpful."*

5.5.2 Benefits and Pay in Lieu of Benefits

One high turnover facility offered staff an additional 1.00 per hour in lieu of paid sick leave, vacation, or holidays. About 50 percent of the CNAs took it. The director of nursing explained that, '*I try to tell them when I hire them, they will have no vacation or sick time, they need to think about it, and be real good at budgeting*.' She noted that this was usually a problem for them. *"I worry that they do not understand the pay in lieu of benefits*."

Health insurance was a major benefits issue to workers, though very few of the paraprofessional workers could afford it, and very few of the facilities provided it at an affordable rate. One aide with 2 children, a single parent, said when asked if she had health insurance, *"I'm not able to have that taken out right now. I'm the breadwinner. I gotta live for now."* In her high-turnover facility, single health insurance required a contribution of more than $70 a paycheck, or 20percent of her take home pay. Family insurance was out of sight. For licensed staff, facilities typically paid a higher proportion of the health insurance, but even their lower co-payments were felt as significant out of pocket costs to these higher-paid staff. Virtually no CNAs interviewed for this study had health insurance. What are the worries you have? "*Insuranc*e. *We can't afford it." "No, it's too much, even for just you."*

One CNA said, when asked what would make her stay a CNA,"*Wages, health insurance…I am not doing insurance through here. This is the lowest wage I ever had. In San Francisco it starts at 10.00, and you get 10 to 12.00 over time. But here, $8.10, that was the highest.*" When asked what a health insurance policy cost the employee, an administrator said,
"I don't know, but I do think the company contribution is $142.00 for a single person. I think for an employee and spouse they contribute $207." But the important thing to workers is not what the facility contributes, but what it costs them. Hardly any non-licensed employee interviewed was covered by employer health insurance, or any insurance besides Medicaid.

The role of benefits was contested and confusing at times. Managers initially spoke of benefits as an important part of their recruitment and retention strategy, but some changed their mind when pressed for details. One administrator said, "*Benefits is a key thing. Our company offers excellent benefits, a good benefit program. It is a cafeteria* plan." How many of the CNAs actually are able to use it? "*Well, not many of them actually sign up. Most are on Medi-Cal, the CNAs (the California Medicaid). Many are single parents, and they are eligible for it."* And what about retirement? "*We are so far behind the industry on 401-Ks! I have been working in the industry for 30 years and I have no real retirement. [Corporation X] had no 401-K till two years before I left. . So your longevity just*

doesn't matter. Compare it to my girlfriend who just retired, at my age, from Pac Bell! And she was not licensed or managerial! And this one, you have to be here a year to even participate in the 401-K. I don't mind that they don't contribute, but why don't they let you put anything aside? I was told in an in-service that our facility was the only one where there was no one participating in the 401-K plan…"

> Company changes, or ownership changes, did also have a large effect on benefits. One facility was owned by a corporation that in turn was owned by a real estate corporation that owned the land on which the facility sat. Another had been bought and sold several times in the last five years. One administrator noted, "*Company B bought it in 2000, and the staff lost half their seniority. So they are very sensitive about that."*

For professional staff that might have been more able to save for retirement, the lack of a retirement plan or any deferred compensation seemed like a serious barrier to staying in the industry. One LPN said, "*There are no benefits here. No 401-K. No retirement. That was the reason I left earlier. I enjoy what I'm doing. I love behavioral disorders. I have been told I have a gift for them."* But another LPN in the same facility, one of the few African-American charge nurses in the studied facilities, was leaving in two weeks to go to work for a corporation that had a minimal 401-K plan, because she had just turned 55, had raised six children, and had no retirement benefits after nearly 30 years of full time work. In both these cases, talented staff were lost because they did not have the most basic deferred compensation benefit, even one that cost the company almost nothing (a pre-tax contributory plan).

5.5.3 Recruitment and Hiring

Research shows that a high percentage of CNA turnover occurs within the first three to six months of hiring (Institute of Medicine 2001). This suggests a combination of potential problem issues involving recruitment and orientation. These might include difficulty recruiting and selecting the right employees, giving them a realistic job preview so they know what to expect, and difficulty orienting them properly to the difficult, demanding work they will be doing.

> It was clear that greater selection in hiring would help, in these interviews. Each manager was asked what he or she looked for in hiring nursing staff. Many of them indicated they could not really afford to have too high standards, since there was a staff shortage. Very few gave any kind of written test or assessment, or did an English language assessment. They did not rely greatly on references, as they found these of little use. They did look for holes in people's work histories, or previous "misunderstandings" or other problems with other managers.

> Even in a low turnover facility in Kansas, recruitment and retention was difficult, according to the DON: *"We are lucky if we can bring one person in a week... In four months I have hired 10 CNAs, and lost 7 of those CNAs*." How did you lose them? "*Some were experienced, and some were not. One is working in assisted living, she only lasted three days. She just didn't call and didn't come back. One was a man who had never worked in nursing homes, he just never came back. One was an older lady who*

had worked for many years. She had car trouble..." Was the car trouble the problem? "*No, I think she found the work too physically demanding."*

In the lower turnover facilities, the directors of nursing were more likely to have a direct involvement in hiring CNAs. One DON said she did not test. *"No, no test. I interview them. I try to see how they respond to stress, to change, how flexible they are with reassignments, why they are interested, what they have done. I try to learn their attendance rate and punctuality at previous jobs, and how they dealt with work rules. Then I take them on the floor, and give them a tour. I learn a lot there on how they respond. If they are offended, I can tell."*

Recently nursing facilities in this sample had participated in a variety of welfare-to-work programs. This workforce was similar to people hired previously, but with even less work preparation and skill, and perhaps more problems with family and basic life issues. Few managers reported government programs were helpful to them. One said, *"There was some program, this place had signed up with to get CNAs, but they ended up with eight uncertified CNAs, and the facility was responsible for their supervision! That wasn't worth much. But that program was funded by the state."* But one CNA explained that her "GAIN" worker had been very helpful to her, in getting her the job and helping her keep it.

Most of the low-turnover facilities either taught a CNA class that was open to the community, or paid for employees to take it at a community college or adult education program nearby. This helped them get first access to potential new employees who could not fund their own two-week program. *"It is good to teach the CNA course in house, it increases retention. You can teach them the right way, and give them follow up support."* But teaching the CNA course and guaranteeing people a job afterwards was no guarantee of retaining people. One DON said, *"I did a study once, looked at all the people who had been through the CNA class. Even then, we had some agency. After six weeks, there were five of the 10 left, after 8 weeks, three, after one year, one. But we had still saved money over agency if you added it all up."*

5.5.4 Orientation and Training

"I didn't get an orientation, because the lady that does it was on sick leave. They hired me and I got to work with four different people." – CNA in high turnover facility

Once employees were hired, striking contrasts were found between high and low turnover descriptions of orientation. High turnover facilities typically did orientation briefly, if at all. One manager acknowledged that, "*With new people, we throw them to the wolves."* She meant they are put out to work on the halls with little or no actual orientation, despite policies that call for orientation. This often happens because the facility is 'short staffed' and so requires the new staff members to work a full assignment, whether they are prepared or not.

Here are some typical descriptions of orientation by high turnover facility managers:

"*I try to make sure they are oriented to every hall. A different CNA would be assigned to every hall, so there is no mentoring, but they will learn the hall from a CNA who is familiar. I try to get them to work at least one shift per hall (there are 4) but don't always. It depends on the openings and number of staff. There are not enough CNAs*." *(Director of Nursing)*

"*Orientation would be nice if it were better, but for licensed staff, there is usually a 3 or 4 day orientation. From facility to facility, there is not a whole lot of difference. I like staff to be flexible, if there are a couple call-ins, they will need to move." Director of Nursing*

"*The orientation is two days. They work on the floor, learn to do paperwork, see videos, spend ½ day on the floor. After they go on the floor, I'll check on them, instruct them, tell them the policy. The charge nurse does not have a lot of management training." (Staff Developer)*

"The people run the new people off the floors…. there is always a complaint about staff not helping. We are trying to eliminate back strains, to lower our workers' comp bill, and they won't help each other. There's this attitude of 'if I'm not your friend I will not help you.' There is always some type of a clique." (Staff Developer)

This was not only the case for CNAs. One RN in California who had just finished 4 years of school had been treated badly by longer-term nurses and a DON who did not help her "learn the ropes," as she put it, and she had decided to leave nursing after only one year of full time work.

In contrast, in low turnover facilities, more recruitment was accomplished through word of mouth, often with friends or relatives. In one facility, the researcher interviewed a brother and sister, niece and uncle, and other family members. This seemed to tie both employees more closely to the facility. One HR Director explained that orientation was a minimum of 30 days in their facility, and she thought that was not enough, before people had their own assignment. Managers in low turnover facilities also were more inclined to test or assess applicants, and to take their orientation to the facility and residents seriously.

"First, I use an assessment tool to see what their strengths and weaknesses are. It has 15 multiple-choice questions and 10 True/False statements. I tell them there are no right or wrong answers; this just helps me see where they need some review. But I also use it to go over their level of knowledge of the basics, such as how to take vital signs, what to report to a charge nurse, and how to assess residents."

A director of nursing said: "*In orientation I let them shadow for one week at least. I tell them they should only observe the first day, then help, the second day, and they can be on their own by the end of the week to do tasks independently. Then I ask them to come back in and tell me what they are not comfortable with. There is always something. Sometimes it will take three to four weeks. I do not rush them."*

Another administrator who had reduced turnover dramatically at his facility, said: "*You can put aides on the floor immediately, they don't feel good, they don't know what to expect, they quit. Then you spend more money on training and keep on agency."*

And CNAs themselves talk about making both training and orientation more useful to them. When asked what would make the job better, one trio in a high-turnover facility agreed unanimously, "*More CNAs."* They talk about people who come and go. "*If they will just stay…you have to want to do it. Some of them, they find a dedication. The more help, it's easier. You have to not want to do it just for a paycheck*." Another CNA said, "*Some of them, they are just here for the money, they are lazy."*

How would you recruit good CNAs to work here? "*Tell them the truth*!" They explain, tell them how hard the work will be, and what it will really be like. "*Tell them it's not easy. You have to be a strong person. You need a lot of patience. It has be something you want to do*," said a CNA with thee years' experience.

Both employees and managers agreed that the required 75-hour minimum training does not adequately prepare employees for their work in the facility. One CNA explained, "*When you're in class, they prepare you for a certain kind of resident, and as soon as you get into a facility, it's so overwhelming. Two or three people expect something different than they actually get. Then they quit. They should be honest up front. In the classes and books, there are no bedsores and no malnutrition. There's been a big change in the last five years. Now Vietnam vets start to show up, in their 50s, their minds are not in the best shape. We are not prepared for these kinds of things."*

Although it is not the focus of this report, the adequacy of training for nursing assistants, and the extent to which inadequate training contributes to high turnover, is a subject that deserves more attention and structured research. This is also true of management training for LPN/LVNs and for RNs, the paucity of which was discussed above.

5.5.5 Career Ladders and Opportunities to Advance

"... A couple CNAs are going to school for their LVN or RN. But there is not enough education or retirement benefit in this company." This was the assessment of one high-turnover facility's administrator.

In contrast, in a low-turnover home in a rural area, the facility paid tuition and guaranteed work hours on a flexible schedule to employees seeking to further their education in nursing. One 30-year-old CNA interviewed had come to work in the nursing facility 10 years earlier, after she collapsed in the cauliflower fields because of an ectopic pregnancy and 'almost died.' She swore then to leave farm work and try to get inside work. Despite being born in Mexico and speaking little or no English, she took classes and passed her CNA class, and then had been an employee for eight years in the low-turnover facility. While raising two children, she had continued her education for her LVN license, and was waiting for test results, concerned that her English skills were still too weak for her to have passed. The facility paid her tuition and encouraged her during her training. The second day the researcher visited the facility; she had received her results and passed the test. She was beaming. While the facility did not require employees to stay working there after their schooling, nearly all supported employees continued to work there and felt significant loyalty to the facility itself and to the managers and residents.

There can be other advantages of having a career advancement program at the facility. At one low turnover facility that offered support to CNAs who were just beginning their training, the retention of nursing staff was a positive contributor to retaining new CNA staff. An HR manager said, *"Here we have a number of charge nurses (LPNs) who went through the CNA training here, then became professional CMAs and completed their nursing training. The charge nurses hold it all together. They know what it is to be an aide, they are not afraid to work."*

One administrator talked about wanting things to change. "*We also have to put money into education. I want to hire a nurse aide trainer. We will hire a staff development RN to focus on nursing and class work. We have to do things that are learner centered, basic life skills, we put money into a distance-learning network so they can get constant in-services.24 The staff has to want to make it change..."*

Different systems seemed to work. Even at higher-turnover facilities, some of the longest-term employees, especially LPNs or LVNs, had received their education with support from the facility. One charge nurse said, *"Going to school at that time, you got paid for four days and worked the fifth. At some point, I couldn't do that, it was too intense. It was a thirteen-month program, with no vacations. After the second semester, I came back here."*

Managers do not always seem to realize there are real barriers to continuing education. Many nursing facility staff also care for their own aging parents at home, or for children. One CNA in his 30s who had a real gift with the residents he cared for said, "*I was thinking of becoming an RN, I knew someone who went to the "Bridge Over" program in Kansas City at college. She really struggled... she was so poor one year while that was going on that I had to buy her toilet paper! And it was only $10,000 back then. I am not sure I want to go through all that."*

5.5.6 Why People Left Nursing Facilities

The investigator always asked why nursing staff did actually turn over, or leave. Most of the answers were consistent. "*They tell me, benefits, and staffing ratios*," said one HR director at a high-turnover facility. Many CNAs echoed this summary. An LPN reflected the terrible choices to be made when she said, "*There are no benefits here. No 401-K. No retirement. That was the reason I left earlier. I enjoy what I'm doing. I love behavioral disorders. I have been told I have a gift for them*." Wages also meant something to workers in nursing facilities. A charge nurses said, "*Then I worked at [Nursing Facility Y] for 8 years. I left there because of money. The money was short. I got a beautiful review, I mean fantastic, and they gave me a five-cent raise! I mean, that was ridiculous."*

When another charge nurse explained why she left another nursing facility, the reasons directly related to the management.

"I was a team leader. It was good experience; I was a treatment nurse, and a med nurse. I left there because I was not able to communicate well with management…The real issue was management responsiveness. They would not take care of concerns, and there was a lack of follow up. If you brought concerns to them, they would blow you off. I understand there are a lot of things that can't be taken care of… but even if they called back and said 'x, y and z can't be done because…' But they didn't."

Some simply burned out or were stuck. "*I've been in it too long to go anyplace else… there is nowhere to go. I don't like paperwork, computers, or typing,"* said one LVN. A registered nurse got tired of having total responsibility for every resident. "*I left for four months, I got burned out and left.*

24 The Omnibus Budget Reconciliation Act (OBRA) of 1987 required that nurse aides have a minimum of 75 hours of initial training and 12 hours of in-service training per year (Hawes *et al* 1997).

I was the only RN on staff for 17 months and I had been on call 7 days a week, 24 hours a day, for all that time. I wouldn't come back until they agreed to hire two assistant directors of nursing."

Then there were all those who left without leaving an official reason. In one facility eight people were "terminated" in April, two of them for 'no call no show.' In this particular company employees could be "no call no show" three times before they were terminated, so these were repeat offenders. Two left for 'personal reasons," one found 'another job" and two were terminated by the company. Similarly there were 8 CNA hires during April 2001, one RN and one laundry worker. Seven CNAs were hired in March, 8 in February, and 11 in January 2001. In March 2001, 2 self terminated, 1 terminated, 1 no call no show. Diane was hired 3/1, and self terminated one day later, on 3/2. Joan B was hired 1/9, and "self terminated 3/10." In Feb 2001, five CNAs were terminated. This facility was truly like the revolving door described in the introduction to this section. What this section documented is that there were a series of coherent reasons for this pattern.

5.5.7 Summary

In sum, a significant number of human resource (HR) practices contributed to either high or low turnover patterns in the nursing facilities studied for this report. First and foremost according to most administrators was compensation (among the HR issues), and several spent most of their interviews complaining about a lack of funds. But nursing staff agreed that while wages were important, they were not determinative in turnover rates. Many other factors contributed to making a good workplace, especially in labor markets where competition for workers had virtually equalized the wages in the two homes that were studied for this chapter. The lack of health benefits was nearly as important, though very few facilities offered really accessible benefits to paraprofessional staff. Retirement plans were extremely important to the more senior nurses, especially those who had worked for many years without one, and the average age of nurses interviewed and observed was in their 40s or early 50s. For the aides, retirement plans were simply unavailable. In fact, some 50% chose to work without any paid time off or benefits in order to make another $1.00 an hour, or $40.00 a week. However, this caused more trouble than intended by management, when they had no sick days or holidays or vacation as a reason to stay, or to pay their bills if they were ill.

In addition to economic benefits, non-economic benefits such as longer orientation, more training, flexibility in scheduling, career ladders or educational opportunities, and having good feedback or good supervision seemed important to a number of nursing staff interviewed here. A longer orientation in and of itself seemed to help with retention of new staff, as did a more stringent selection process. Nursing facilities often did not have a human resources manager or coordinator, and this was apparent in a somewhat haphazard approach to benefits and other practices that are often designed to retain employees. Rather, most HR issues observed seemed to be about not being paid overtime, or for that extra shift one had worked. HR directors, if they existed in high turnover facilities, spent the vast majority of their time recruiting and screening staff, and processing their exit paperwork.

5.6 Motivational Work Organization and Care Practices

A series of well-known principles of motivational work organization are violated routinely in structuring certified nursing assistant's work, and also in other nursing jobs in long-term care facilities (see Eaton 2000, Hackman and Lawler 1980, Herzenberg *et al* 2000). For instances, CNAs are rarely given a "whole job" to do, but rather are instructed to take care of some portions of their residents' needs, without knowledge of the larger context of their diagnosis and treatment or care plan. Rarely are they given feedback about the results of their efforts and the consequences of any problems. They are autonomous in the sense of not being well supervised, but not autonomous in the sense of having a larger recognized responsibility than an unskilled worker usually has. And most typically, they are assigned to different residents each day, week, or month, as if the warm and mutual human relationships that are at the core of good care giving did not exist.

In low-turnover nursing facilities, a variety of care practices and different patterns of work organization emerged; many gave more credit to the relationships and to the workers' opinions and observations than in the high-turnover facilities. In high-turnover facilities, workers and residents alike were treated more as 'puzzle parts' that had to be matched up in certain ratios, and any resistance to constant movement and flexibility was treated as a problem. However, no single successful set of care practices emerged from the study, as no such single set probably exists. Still, among the care practices that were observed to vary in the course of this study in the nine facilities were the following:

- consistent vs. irregular assignment
- generating feelings of responsibility, ownership, and accountability
- building on intrinsic motivation
- attachments to residents honored or dishonored
- floating staff
- use of agency staff
- dementia care
- extent of individualized vs. institutionalized care
- meal time etiquette
- shower and bath practices
- activities – extent and type, aides' involvement
- dealing with death and dying

The following section gives concrete examples of the most dramatic positive care practices, as well as some that promoted poorer care and less retention.

5.6.1 Consistent Assignment and Individualized Care

"*I don't try to match CNAs with LVNs or residents. They are assigned all over the facility. Some residents like certain nurses. Some rotate, some are permanent.*" -- A staff developer at a high turnover facility.

"Mostly I try to keep them on the same halls, I have been rotating the CNAs the last few weeks, so they will get to know the other halls, so they can be flexible. After a while, you can get to burnout on some halls, and need a break, different acuity…. They need to know the whole building, if there are a couple call-ins, they will need to move." – Director of Nursing, high turnover facility

"The Alzheimer's' unit is the most enjoyable place to work here, because it is smaller. It is more like a ... neighborhood. The staff have a consistent work assignment. And after a while, I noticed that the residents started to look better, their hair would look better, their clothes neater and cleaner... the aides would bring in barrettes for their hair, or tomatoes from their garden for them. They would act more like a family visit as opposed to coming in for a job. They do the extra things-- that are absent unless you go back to a social setting." – Director of Nursing in a low-turnover facility, where smaller neighborhoods are being considered for all residents

While most recent research and practice innovation (Eaton 2000, Fagan *et al* 1997) points toward the advantages of consistent assignment of residents to staff for just the reasons that emerge in the example above, most administrators and nursing directors, and some staff members, resisted the idea and the reality. The most typical explanation given in this study was, "They have to know everyone in the facility so they can work everywhere if they are pulled or if someone calls in." This assumed that people would not come in to cover their assignment, so others would have to do it, which then in some sites became a self-fulfilling prophecy. The other reason given for rotating or floating staff was to 'even out' the care assignments so that no one will have the 'difficult' residents all the time. However, this reasoning assumed that all residents were either difficult or not, when that was clearly not the case to workers--- some aides got along famously with a particular individual while others could not deal with the person successfully at all. In fact, aides regularly kidded each other about special relationships with particular residents. This may be because no one else had figured out the real reason for the 'difficulty,' or just because of a special connection that was made between a resident and a worker. Note this example, told to the researcher by a CNA:

"There was one gentleman, they told me to be careful, he's rough. But we get along well. I'm the only one who can put him down. I don't put him to bed until he's good and ready. When a man is 70-something years old, you don't tell him when to go to bed. If eight o'clock and nine o'clock pass by, I let him wander around. I have no problems with him. It was hard to find out what he wanted. Sometimes you don't have to talk a lot to be heard … They can refuse meds too, which makes it a little more of a challenge especially if they really need them. But there's ways to work around everything."

In this case, the gentleman was "difficult" or physically resistant because someone was putting him to bed at 7 pm, and he did not want to go—but apparently either he could not communicate it, or the person did not listen. So this CNA simply figured out, from his own innate sense of what was appropriate for someone this resident's age, that he should be able to go to bed when he was 'good and ready.' It does not sound like a radical intervention, but in most nursing facilities, it was.

In contrast, note one administrator's response to a question about individualized care, do people get to decide when they get up, what they eat, what they will do? "*No, it is more of a schedule. They have set scheduled meal times for the dining room. We try to be flexible but you have to be careful. A few people like to get up after 9, and breakfast is at 8, so they are offered toast or cereal, something that*

isn't too hard to prepare." Whatever she was being careful of, it was not the residents' ability to eat when they wanted to, or to get up when they preferred. And this may have directly led to higher turnover of nursing staff because of the difficulty of getting everyone to eat at the same time (despite the institutional advantages of having everyone eating simultaneously) as well as, hypothetically, poorer nutrition, hydration, and even more depression.

5.6.2 Quality of Care: Potential Implications of Individualized Care for Management Practices and Nursing Staff

While this study was strictly cross-sectional and did not use patient care records to assess quality, some indicators of general quality of care at a facility were evident from observation. For instance, at a facility with no individualized care plans and no consistent assignment, the researcher sat in the lobby for 45 minutes waiting for a meeting with the administrator. The following field notes were taken:

Having nurses rotating and taking care of lots of residents means that, for instance, someone gave a wheelchair-bound resident a glass of water and a paper carton of a serving of ice cream. Then, someone else came by and picked it up, not knowing it has been spilled (water was) or not eaten because the person couldn't get the top off (ice cream) or that it took this resident a very long time to eat it because of a serious tremor (in the end her ice cream was taken away half eaten, when she seemed that she really wanted to keep it and tried to indicate that but the nurse did not appear to be paying attention). Few employees seemed to be in any personal relationship with them, they just come and go, give out meds, give and take a serving of food or water, but don't talk or really engage….One other resident tried to explain that the first resident wanted her ice cream back, but no one on the nursing home staff listened to her either. (Field notes, Lobby of a high turnover facility, also observing nurses' station)

Some facilities studied, usually the lower-turnover ones, were in the process of thinking about how to increase individualized care. For example, the researcher asked, 'What are you doing, if anything, to increase resident choice?' "*We are looking at it. Ideally, we want them to eat when they want. We encourage them to tell us what care they want, a shower or bath, or to get up when they want. We try to... when they come they have a meeting with the dietary manager, and she makes up a preference list for foods. And we try to learn what kinds of activities they like." (*DON) But most had not made it very far. One nursing assistant reported a positive story from her past work experience in another state. Note how this story illustrated a deeper understanding of who the resident is, as well as helping the CNAs do their jobs better. "*In Washington, we let them help, cook their own breakfast. One lady, we gave her a basket of baby clothes to fold. She would fold that basket over and over all day long. She was a farm girl and she slept from 7 pm to 4 am, and then she was up. You couldn't get her to sleep late, but she loved folding that laundry." (Certified Nursing Assistant)*

Importance of Relationships in cases of Dementia:

One aide in a low-turnover facility explained that she chose not to work as an agency staff person because of the relationships she had developed with residents. "*I like the direct care. We're all they really got. But last year I worked 125 hours in two weeks! Course, I was quitting smoking at the time, too. But really, they need to hire more people!!"* What do they do if someone calls in, call someone else to come in? *"There's nobody to call in. People don't use the agency staff because it's too expensive. I thought about doing agency work, because you get paid more. But I realized you don't know the people. You've got to know how they are, some of them can't communicate. You have to go by gestures and blinks and points."*

It seemed that it might take more staff to implement individualized care, at least at first. At the one facility where individualized care had gone the furthest, a manager noted, *"They created seven aides positions, on evenings, last year. They needed them to implement more of a philosophy of choice."*

5.6.3 Neighborhood Concept

Several low-turnover facilities were discussing converting their hallways to smaller neighborhood units that would have more consistent assignment and perhaps more individualized care. "*We want to go back to the neighborhood concept, get rid of the nurses' station. We believe we will retain staff in the future because of this."* (Administrator/ CEO) It is important to realize that any change in care practices also has effects on the nursing and care giving staff. *" I think a maximum of 20 residents is needed to function as a neighborhood. I am hoping for more ownership, along with the physical changes in structure. We will remove the nurses' station so it is less institutional and has a more home like look. We are hoping that there will be space for people to sit and visit. We have to think outside the box, there are tons of ideas!"* (Administrator)

Some facilities had created nursing units that functioned something like neighborhoods. Staff tended to get very attached to 'their' unit, and the people on it. For instance, one aide said, *"This is my home, C____. It's rare you find a whole entire staff that's family-like."* 'What do you mean by 'family-like?' *"We can go to each other's houses after work and have fun. On other floors, no one does that."*

5.6.4 Meaningful and Varied Work

One of the basic precepts of work process research is that people need and require and welcome meaningful work (Hackman and Oldham 1980). In its way, nursing work was intrinsically meaningful in terms of its effects on the lives of others. Some workers realized that, no matter how troubling other aspects of their employment are. A 33-year old male CNA, who was observed treating residents with exceptional kindliness and care, *said, "I have a real sense of why we're here. I never realized it until I worked at a factory, packing boxes. The money is better, but ... I couldn't stand it... it's meaningless. Here, every day is totally different.* " Another CNA said, *"I got burned out a while back, and worked at a factory. I can't imagine doing that for a living. It was completely meaningless."*

5.6.5 Dementia Care: Adjusting to Residents With Dementia and Caring for Them

"I loved the people over there, they were sweet, the type of patients. They were very loving. They would hug you one minute but hit you the next. But that was the disease, not them. I like these patients. One of them said to me today, 'you're back,' after I was off for three days. That makes you feel good." – CNA

'How do you handle problems with dementia patients?', the researcher asked. "*I don't take it personal. A lot of times they don't know what they are doing. But, even with dementia, they know if they are being abused. They might act stubborn all day. Somebody else can be mean to them, and it will reflect on you,"* said one CNA

Is the dementia unit harder to staff? "*Actually that's not as much of a challenge. The staff likes the family feeling of 20 people on a neighborhood. There is a core group who work there every day, including housekeeping and a CNA. Dietary takes the food down there and CNAs serve it. They have had some classes and special training on dementia. They try to help the staff understand how dementia can affect a person, by putting cotton in their ears, or deadening their senses, or messing up their glasses, and trying to get them to understand what it is like. It helps a lot. They have a lot of intervention skills. There are no staffing needs there. A lot of times people request to work there, a few because it is lighter care, less physical lifting, but it is still more work for your brain. Most of the people can still walk*."- Administrator, low turnover facility.

Dementia care as observed in this study clearly took both specific training and a special kind of person. One LPN explained in detail just what it was like to take care of mid-stage dementia residents. *"You have to have the right mind to take care of these people. None of these patients know my name when I go around and do rounds, no matter how long I've been taking care of them! I've been spit at, kicked at, you have food thrown at you, every day when you come to work."* Then she gave some examples of creative ways in which she had reduced residents' distress, while maintaining their safety (see box below). It seemed to the researcher that if aides had been permitted or encouraged to train with this nurse, perhaps their difficult experiences in dealing with dementia might have been translated into good ones, giving them more confidence and success in this difficult job.

Stories of Sensitive Dementia Care: Possible Teaching Material for Nursing Staff

Let me tell you a story. There was a resident named Diana. She was a big smoker. All she wanted was cigarettes, cigarettes, cigarettes. Of course this is a non-smoking facility. She was driving us crazy, all the time wanting cigarettes, never stopping… So, Nancy (the DON) said, We have to get her on drugs. I said, Nancy, we're going to fix her without drugs. I'm going to let her smoke. Nancy said, "What do you mean?" and I said, "Watch this." And I cut a straw, and stuffed the end with cotton, and colored part of it pink with a magic marker. Then I got a tongue depressor to simulate a match, and I gave her this 'cigarette.' And I said, Diana, here's your cigarette.' And I (making motions) "lit" that tongue depressor against my thigh, and I said, now, would you like coffee with your cigarette? Let me give you an ashtray." And, she was puffing away on this straw, saying to everyone else, "Oh, these are really good." She was walking up and down the hall, telling everyone. One time she had four of these

'cigarettes' hanging out of her mouth. And I kept after her, "Diana, don't burn a hole in the carpet." I guess I'm half nuts! But she was calm and quiet, without a single drug!

Then there's my bus stop. Everybody here wants to go home. So, I made a bus stop." (Sure enough, there is a large sign saying "bus stop" right near a few comfortable chairs by the nurse's station.) *"And, so I tell them, the bus stop is down here. Go ahead and wait for the bus. And, while you're waiting, don't you want a snack? Something to drink? And before you know it, they have forgotten they are waiting for the bus, and eventually they go on and do other things. But sometimes I have had half the floor down here, waiting for the bus. I guess it's something about my tone of voice. I am really sincere about it.* (She almost had the researcher convinced there is a bus stop there.)

And we use props. We have a big bag of fake money. Some of them are worried about money—they need rent money, they are afraid of being thrown out of their apartment. So we give them rent money, and collect it, and give them a receipt, and they are on cloud nine.

Licensed Practical Nurse – on a Dementia Unit

This nurse was gifted in her ability to calm and soothe dementia patients without hurting them. She was describing her own specific way to implement 'validation therapy,' a currently favored technique to work with dementia patients that is in stark contrast to the 'reality therapy' that many nurses learned in school, if they learned anything. She could have done a tremendous job helping other people learn to take care of these residents as well.

The researcher asked whether she could share these techniques with the other staff. "*We had an Alzheimer support group. It was a 7-week and then a 10-week course. It was an incredible course. I try to tell my staff… they are uneducated, they have no training. Sometimes they think that the residents are acting this way on purpose. They can't realize that they can't help it. Every now and then I hear someone say, 'she did that on purpose,' and I have to remind him or her that's not true. The better non-professional staff eventually gets it. You got to be real patient. It takes a certain personality. You have to not be bothered when you are sworn at, or when you come up to them to hug them, and they hit you, or throw their milk at you. Some aides can't stand it. You have to realize it's something else that's upsetting them, it's not personal*." Does she have any role in hiring non-professional or professional staff to work with her on this unit? *"No, not really,"* she said.

5.6.6 Involvement in Care Planning

Recent research has confirmed that facilities where CNAs participate in care planning have lower rates of turnover compared to similar facilities where they do not. (Cite) Yet in virtually no facility, high or low turnover, were CNAs actively involved in care planning. At most, sometimes nurses

asked them for input before the meetings. In some cases, even the charge nurses were not involved in care planning meetings.

"*No, but… we'd like to, it's just too hard*." – Director of Nursing, high turnover

"*Well, the facility wasn't doing that. I usually have a CNA on the safety committee, the one who is most recently injured. I've been trying to do that. I want to get the CNAs and RMAs involved in the care plans. I'm trying to get a true CQI [continuous quality improvement] up and running. We already do the weight variance, that kind of thing. As a S____employee, these were things we had to do. That's my background. Of course, here we have no space. But when we get the employee lounge I'm going to put a CQI chart up in there."* Administrator, high turnover

5.6.7 Communication and Report

As mentioned in the section on leadership, communication between employees, especially across hierarchical boundaries and between shifts, was found in this study to be very important. Some more motivational workplaces have instituted the ritual of 'report' from one shift to the next, even at the level of the CNA instead of just the nurse. *"At the frontline level, everyone has multiple things to do. The acuity level has increased dramatically and everyone is busy, so the charge nurses say, 'I don't have time to supervise.' They need to know it is not optional. They need to be in touch with the staff, with what goes on. Recently they have succeeded somewhat in having the nurses give CNAs report. They need to empower them, as professionals, not just to change beds. They do not feel valued. The job is very difficult."*

5.6.8 Teamwork—or its Absence

Remarkably few of the facilities studied for this report used teams of nursing assistants, or even nursing teams. One facility did, on the first shift, and aides said they liked working there because they had a partner to help them, to work with, and to talk with. But other managers said, "*They don't work together too well. There are personality conflicts. I want them to solve it themselves."* However, leaving it to the aides to solve 'themselves' was not working.

Of course establishing teams requires both management training and sufficient staff, both of which are in short supply in the nursing facility industry. One CNA noted, " If there are more staff, it is not as tiring. We have a lot of total care. I mostly leave (places) because of the pay. I don't like being the new person on the block. I don't like to move from job to job. You want to leave if there is no teamwork. On this shift it is stable. There have been the same nurses and aides for a year."

5.6.9 What it Used to be Like: Acuity, Staff, Regulation, etc.

A pervasive sense permeated all the facilities visited that 'things have changed' even in the last five years, such as increased paperwork, increased patient acuity, more cost and time pressure, and the workforce. "*Five years ago, there were a large number of people with 15 years' service. They were people who took a little extra time with the PMs (evening rounds), would sing, put on a variety show, work on a float together....* – An RN, former DON in a low turnover facility. Another nursing director in a low-turnover facility said, "*We used to have time to have fun with each other… laughed*

with the residents, and soaked their feet, spent 30 or 45 minutes with them, gave them a truly good pedicure, so that even someone with difficult nails... There is nothing better than having your feet soaked, and the residents loved it! Now we farm it out to a podiatrist, if we do it at all."

Resident acuity is seen as much higher. *"You don't have any more nice little old ladies. When I got here the census was in the low 80s, and I overheard the social service person saying to a hospital discharge planner, 'don't you have any nice little old ladies?' I had to stop that. So now we are up to 90. Yes, I will take the little old ladies, if they are private pay. But we get lots of inquiries for paraplegics, HIV. We never had an HIV patient until I got here. I had to have a massive in-service."* – Administrator in a high turnover facility

5.6.10 Attachment, Sadness, Death, Distance

One administrator told a story about how she got very close to and attached to an Italian lady in her job during college. One day she came in and the lady's room was empty, cleaned out.

"Usually when they just go to the hospital they don't clean it out like that. I asked, 'What happened to so-and-so?' 'Oh, she died last night.' And then I cried, right there in the middle of the floor. I realized then that I couldn't get attached. You have to keep a distance." Yet facility managers or social workers could work on helping people deal with the inevitable approach of death for at least some of their residents. Attending to death carefully and explicitly is a practice (as noted above in the section on leadership) that is drawing increasing attention, both for staff and residents, in the 'culture change' community in long-term care.

5.6.11 Summary

In summary, the problem with the work organization and care practices observed in most of the facilities was that they didn't seem to be allowing the caring for people as they wished to be cared for, even if they could so communicate. And where they could not communicate, the assignment system of rotation diminishes the likelihood of making a positive match between nurse's aides and residents.

5.7 Sufficient Staffing Ratios and Support for High Quality Care

"More people would stay CNAs if there was more CNAs, so we wouldn't have 13 residents or ten residents. It's hard to keep residents dry, feed them, and on top of that give showers. There's just not enough time." --21-year-old female Hmong CNA, 3 months' experience, in college and working full time, at a high turnover facility

"More staffing would make them stay. Working short makes them leave." - CNA

The fifth and final management practice that clearly was associated directly with turnover and retention rates in the facilities visited for this chapter relates to nurse aide staffing in particular, and nurse staffing in general. While there was no 'magic' ratio that emerged in this study, it was clear that virtually no aide felt she could adequately take care of more than eight present-day nursing facility residents on day shifts, about the same number on

evening shifts, and somewhere between 10 and 15 on night shifts, depending on how active and alert residents were at nighttime. Licensed nurses felt strongly that having full responsibility for even 20 residents at a time on their shifts was unsafe, but it was alarmingly common.

5.7.1 Understaffing and Working "Short"

One Filipino nurse said, "*Sometimes there is understaffing so I cannot give really proper caring. There is one nurse to 20 residents. We cannot handle them as we would like. We just give them the pills. It is just functional, but not communicating. It's not how it is supposed to be."* Administrators in high-turnover homes tended to complain about current staffing ratios, whatever their level in their state (Kansas requires 2.0 hours of nursing time a day, California requires 2.9). One administrator said, "We staff at 2.7 or thereabouts but of course some days we will slip down to 1.9 or so, and if you ask me can you do that forever, no, but can you do it once in a while? Sure. And I don't think the government should regulate staffing, that will just cause more problems, no one is ever going to be fully staffed all the time." Another said that when people called in, "*We have nothing to cover them, it's a big problem. The regulations here in Ca. have changed. Now that we can't count the licensed nurses' hours double, it's hard to maintain 3.2 nursing hours. I have some of the CNAs working 8 hours instead of 7.5, but not too many."* One Registered Nurse at a high-turnover facility said that she had her scheduled staffing only 20 percent of the time, and even the scheduled staffing was too low in her opinion.

An aide said directly, "*Working short causes people to leave—it makes them feel as if the work they do doesn't matter."* Sometimes aides are driven to threaten direct action when things get bad enough. This only happened in high-turnover homes in this study. *"We only have two [aides] tonight, we are supposed to have three. When this happened for two nights in a row, we told the management, we are going home if somebody else doesn't come in, on the third night. And you can feel it when you have more people. I get home, my legs hurt, my back hurts. Sometimes it goes smooth sometimes, and sometimes, it doesn't. If one person is sick, has the runs, or falls, and you are doing vitals every two hours! We hate it."*

Most administrators and nursing directors readily acknowledged the direct connection between insufficient staffing and high turnover. "*We have a high turnover rate, mostly of CNAs. Some of it is dissatisfaction with the physical demands, the psychological demands, the emotional demands, it can be difficult. Also it's the ratio of CNAs to resident-- there are too many residents per CNA. We have better than some other places, 1 CNA to 10 residents is pretty good.... But there is a lack of time to meet emotional needs. The career CNAs talk about the times when they could do the patients' hair and fingernails, or sit and talk with them and look at pictures. There was a high level of reward from that."*

The Filipino RNs seemed to have the most problems with staffing, at least on second shift where many were concentrated. What do you need to do a good job? "*More nurses. There is only one nurse here for the three to eleven pm shift. There are 40 residents! And they are all trying to leave. And they all need feeding and medications, and charting and the CNAs need supervision. We need more staff per patient, first and foremost. Second, the administration."* What about it? "*More communication, more listening, not a one-way process*."

When asked why CNAs leave, one RN was quite direct. "*They are overworked. They need more staffing*." What would be the right level of staffing? "*In the hospital, if it is critical care, it was one to one. And in this place in the Philippines it would usually be 1 to 8."* One DON in a high turnover facility said, "*On good days I run CNAs at a 1:10 ratio, evenings 1:15, and nights 1:20."* But there were a lot of "not good" days. Another administrator said, "*Good providers will do the right thing. We staff much higher than the minimum staffing ratios in Kansas."* Yet even providers with relatively high staffing levels were having trouble staffing at a level they felt was adequate.

Some administrators saw that they needed more direct care staff relative to management. *"We have to create a social environment. I'd like to get rid of middle management and get more caregivers. The more restrictions we get, the more specialists we have. If we have more CNAs, we will have better happiness and better staff will be there."*

Staffing at the right level in this study was not just a matter of more bodies. For instance, agency staff were sometimes felt to be more trouble then they were worth since they had to be trained and supervised and usually, they did not know the residents, did not know where their dentures are, whether they wore glasses, how they needed to be fed, dressed, and toileted. Yet agency staff were paid almost twice as much for every hour on the job as regular staff, and often brought with them a negative attitude about anyone who would do this kind of work for less than they did, according to both managers and CNAs.

5.7.2 Building on Intrinsic Motivation

Good care could be its own reward, generating both feedback from residents and families and feelings of worth—but this seemed to be rare. In part that was because there was so little time for the activities that generated such positive feedback. "*When people speak who haven't spoken for months, or when I see a light in their eyes that hasn't been there for ages, it makes it all worthwhile,"* said one charge nurse, the one who wore bunny ears on Easter. This was in stark contrast to a high-turnover facility where residents were treated much more roughly: "*What do YOU want*" was a typical comment overheard by the researcher. Also, the series of responses below was typical of CNA interviews in all three states.

What do you like about the job? "I enjoy helping people, helping the residents, giving them support, keeping their spirits up, making them happy."

What don't you like about the job? "The lack of CNAs. There are NOT enough CNAs. We have to work short. Then you have TOO MANY residents to yourself, and not enough help. If we have 13 residents to one person, and we have to shower 2 or three, and get five down, it's just two much. That's the main problem."

How many residents do you have? "It varies. It goes from 10 to, like tonight, we have 20 each." *(Someone called in, which seemed like a routine occurrence.)*

5.7.3 Corporate Policies

When asked about agency staff, most facility managers said they did not use it very much. One said, "N*o, that costs too much; corporate won't let us*." While corporate policies were not studied in this report, they clearly had an effect on the human resources and staffing practices described herein, and would be a useful subject for a future study.

Staff shortages were also real in several areas, though they were exacerbated by low wages and poor working conditions. Some managers felt torn between hiring more people and hiring good people. "*It's better not to get the wrong people in. We've got a good group up here right now. I am left with a good crew now. There is a shortage everywhere. We need more nurses and more CNAs. Maybe more money would help. If we had more staff, it would be easier on the people…. Even if you were making a lot of money, and you were working yourself to death… They're trying, but I guess they can't find anyone."*

As one CNA left her interview, she said, *"We've been praying for more staffing, every day."*

5.7.4 Summary

In conclusion, it seemed in these interviews that short staffing was a circular problem that could lead to more short staffing, in a kind of vicious cycle. When people worked short, they described getting more tired as well as more resentful, and then they said they were more likely to call in in the future, making it more likely that someone else would work short. Also, more injuries were reported by workers on short-staffed units, and they also said that residents were more difficult to comfort and soothe, since time was scarcer. The ability to develop relationships that would bring the injured person back to work, feeling an obligation to the resident, was less likely to be present in a short-staffed setting, or one where everyone was rotated constantly.

Perhaps the last word on staffing could be left to a young, 21 year old Hmong CNA who was finishing her second month in her job, and going to school full time. 'How was your first two month time here?' asked the researcher. "*Well, it was good but it gets hectic sometimes, confusing, hard, because of the shortage of CNAs. We have up to 13 people at one time, to feed them all, sometimes it's frustrating. When I was hired here they were short. Two of us were hired at the same time. Four work each night for 40 residents, is what they told us. Orientation and training was four days, with a CNA, I watched her do rounds, where things are, then got my own patient load. Class prepares me very well but the difference is in the time, so you have to do them simpler. For example, when I am changing them, I want to use not just one pad, but another for safety, it's really hard. You are supposed to do one patient at a time, but I'll do one and go to the next one and come back, to fit it all. There is less time, and more people, and you have to do everything faster and quicker."*

5.8 Conclusion

This chapter used field research to infer from 159 interviews and more than 100 hours of observation that five key managerial practices seemed to characterize the environments with lower turnover and better retention of nursing staff. These managerial practices were in some cases associated with individualized care practices with residents that are only possible with a stable and well-trained, well managed staff, although the focus of this report has not been the quality of care. While each facility has its own unique characteristics, and the ethnographic research on which this particular report is based is by definition limited in scope, the investigator believes that further research into these practices would yield larger-scale and more definitive evidence. The value of ethnographic research is in understanding the mechanisms for processes of interest, and it was the goal of this chapter to contribute to this larger effort.

The five key practices identified here included high quality leadership and management, a practice of valuing and respecting nursing staff, especially direct caregivers, positive human resource practices, both economic and non-economic, a set of work organization and care practices that help to retain staff and build relationships, and finally, a sufficient staffing ratio to allow for the provision of high quality care. Additional surprising findings included that even in a complex system, one person could make a vast difference--- particularly in a key leadership role in the facility, but also as charge nurse on a unit, or an HR or staff development person, as long as the individual had direct contact with the care giving decisions and staff members.

It is hoped this report provides a clear picture of high turnover homes compared to low turnover homes in the same labor markets, and makes the case that managerial practices can and do appear to contribute to reduced turnover. While these practices require both further large-scale, randomized evaluation and additional ethnographic study and careful implementation, they are not inaccessible or mysterious, and are clearly within the ability of most managers interviewed for this study. However, they also require significant discipline, a good deal of compassion and empathy, openness to learning and innovation, a willingness to delegate responsibility and to hold managers as well as staff accountable, and an interest in spending significant time on the floors or units of a nursing facility. Management practices do make a difference, according to the nursing staff interviewed for this study.

References

Appelbaum, Eileen and Rosemary Batt. 1994. The New American Workplace: Transforming Work Systems in the United States. Ithaca, NY: Cornell University Press.

Baron, James N. and David M. Kreps. 2000. Strategic Human Resources: Frameworks for General Managers. NY: John Wiley and Sons, Inc.

Eaton, Susan C. 2000. "Beyond 'Unloving Care:' Human Resource Practices and Quality Outcomes in Nursing Homes." International Journal of Human Resource Management. June. Pp. 591-616.

Eaton, Susan C. 1997. "Pennsylvania's Nursing Homes: Promoting Quality Care and Quality Jobs." Keystone Research Center High Road Industry Series # 1. April. Harrisburg, PA: Keystone Research Center.

Fagan, Rosemary M., Carter Catlett Williams, and Sarah Greene Burger. 1997. "Meeting of Pioneers in Nursing Home Culture Change." 1 October. Rochester, NY: LIFESPAN of Greater Rochester.

Hackman, J. Richard and Greg Oldham. 1980. Work Redesign. Reading, Mass: Addison-Wesley.

Harrington, Charlene, Helen Carrillo, Susan C. Thollaug, Peter R. Summers, and Valerie Wellin. 2000. "Nursing Facilities, Staffing, Residents and Facility Deficiencies, 1993-1999." University of California San Francisco, Department of Social and Behavioral Sciences, October 2000.

Hawes, Catherine *et al*. 1997. 'The OBRA law of 87." Journal of the American Geriatrics Society, 45, pp. 977-985.

Herzenberg, Steven, John Alic, and Howard Wial. 1998. New Rules for a New Economy: Achieving Postindustrial Prosperity. Ithaca, NY: Cornell University Press.

Institute of Medicine, Committee on Improving Quality in Long-Term Care. 2001. G.S. Wunderluch and P.O. Kohler, editors, Improving the quality of long-term care. Washington DC: National Academy Press.

Kochan, Thomas A., Harry Katz, and Robert McKersie. 1986. The Transformation of American Industrial Relations. New York: Basic Books.

Meyer, John and Natalie Allen. 1997. Commitment in the Workplace: Theory, Research, and Applications. Thousand Oaks, California: Sage.

National Citizens' Coalition for Nursing Home Reform (NCCNHR). 1985. "Consumer Perspectives on Quality Care." Washington DC: NCCNHR.

Straker, Jane Karnes and Robert C. Atchley. 1999. "Recruiting and Retaining Frontline Workers in Long-Term Care: Usual Organizational Practices in Ohio." Scripps Gerontology Center, Miami University, Oxford, Ohio. Available through http://www.muohio.edu/scripps.

Paraprofessional Healthcare Institute. 2001. "Direct-Care Health Workers: The Unnecessary Crisis in Long-Term Care." Submitted to the Domestic Strategy Group of the Aspen Institute.

Tellis-Nayak, V. 1989. « Quality of Care and the Burden of Two Cultures: When the World of the Nurse's Aide Enters the World of the Nursing Home." The Gerontologist. 29 (3): 307-314.

United States. General Accounting Office. 1999. Report to Congressional Requesters. "Nursing Homes: Additional Steps Needed to Strengthen Enforcement of Federal Quality Standards." GAO-HEHS-99-46 (Washington DC: US GAO, March 1999).

Zahrt, Linda M. 1992. "The cost of turnover." Caring. April, 60-66.

Appendix A

Typical Process for Interviews at Selected Nursing Facilities in CA, WI, and KS.

Outline

1. Administrators
    a. I scheduled a 15 to 20 minute meeting with administrators, as the first level of contact in the facility, and also to introduce me to other managers and staff.
    b. For administrators, I focused on questions about mission and values, overall management philosophy, overall care philosophy, and perceptions of issues and problems related to recruitment, retention and turnover.

2. Directors of Nursing
    a. This interview lasted about 30 minutes, at least. I asked the DON about training, about supervisor and management relationships, about work assignments and scheduling, about her own background and experience and philosophy. Then I added turnover and retention questions, including about specific management practices of work organization and care organization, probing for resident-centered or worker-centered practices.
    b. I would also ask her to whom else I should talk and through her gain access for charge nurse and worker interviews in the targeted facilities.

3. Charge nurses
    a. I asked charge nurses all the questions about work and care organization, about quality, and some of the questions about training.
    b. I ordinarily sampled charge nurses for about two units per facility, depending on the size and composition of the facility, perhaps one 'ordinary' unit and one dementia unit, for instance.
    c. I spoke with both RN and LPN charge nurses
    d. I also asked about their backgrounds, recruitment, training in gerontology, their perceptions of issues of retention for their own classifications as well as those of CNAs' recruitment and retention.

4. CNAs –paraprofessional nursing employees
    a. I initially selected a sample of 4 or 5 CNAs in each case study facility, often to correspond with the units in which I interviewed charge nurses. I also interviewed at least 2 CNAs on evening and 2 on night shifts.

b. I wanted both senior and newly arrived employees as well as some medium term employees, depending on the profile of the facility.
c. I attempted to do formal or informal focus groups in the break room or at the beginning or end or middle of shift, though that depended on facility practices and voluntary support.
d. The paraprofessionals' perception of management practices, work and care organization, their intention to turn over, recruitment and attraction and selection, was important
e. I wanted to know about orientation and training, and relationships with managers, charge nurses, residents, and families. What keeps them there? What would make them leave? What is their past and desired future work experience?
f. I imagined a 15 to 30 minute interview with these workers, hopefully on their break time in a private place such as an unused office or a break room that has some privacy. Interviews lasted from 10 minutes to more than 1 hour, and occurred everywhere from lobbies to storage closets, on nursing stations, or in corners of dining rooms or quiet rooms.
g. I also considered small informal focus groups with varying other workers, to increase the breadth of the responding group.

5. Other people that I did interview in nursing homes re: recruitment, retention during this study

a. Staff development director
b. Human resource director and/or assistant
c. Scheduler
d. Whoever recruits, interviews, selects, and hires nursing staff
e. Quality assurance personnel
f. CEO or other officers who are on site
g. Residents who are willing and able to talk
h. Family members or family council members
i. Secretarial or administrative staff, especially if long term
j. Social services director
k. Activity director
l. Alzheimers' coordinators or directors
m. Assistant directors of nursing
n. Assistant administrators
o. Chaplain
p. Volunteers, especially regular ones