THE NURSING WORKFORCE IN ACUTE CARE HOSPITALS

INTRODUCTION

The most significant workforce issue affecting America's acute care hospitals is the shortage of nurses. Hospitals are finding it more difficult to recruit and retain nurses and, as the average age of registered nurses climbs and enrollments in nursing school programs fall, the shortage will likely worsen. This is particularly troubling, for as baby boomers age there will be an increased need for bedside nursing. Changes in the delivery and financing of health care, along with increased negative perceptions of nursing, are factors in this shortage. Surveys of nurses and the general public reveal a widespread concern with the effects of the nursing shortage upon the quality of patient care at understaffed facilities.[1] Clinical data supports these concerns, illuminating the importance of nursing to the quality of patient care. This chapter describes Connecticut's nursing workforce, analyzes the evolution, causes, and consequences of the nursing shortage, and suggests what can be done to alleviate some of the problems.

NURSING WORKFORCE COMPOSITION

The total number of nursing licenses in Connecticut has increased slightly during the past four years (Exhibit Ten). There has been a significant increase in the number of advanced practice registered nurses (APRNs) licensed, including both those who live in and those who live out of state.[2] The number of licensed nurse midwives has also increased. The number of licensed practical nurses (LPNs) has declined slightly; the number of registered nurses who are not APRNs or licensed nurse midwives has also decreased slightly.

Even though the number of licensed nurses has remained relatively constant, hospitals uniformly state that they have a nursing shortage. A 1999 survey of 21 acute care hospitals by the Connecticut Hospital Association (CHA) revealed 420 Full Time Equivalent (FTE) nursing vacancies, or a total vacancy rate of 8% (See Exhibit 13).[3] According to CHA, this vacancy rate is part of an upward trend in nursing vacancies for acute care hospitals during the last five years. The highest overall RN vacancy rate was in psychiatric nursing (11%) and medical/surgical nursing (11%). One hospital reported a 32% vacancy rate for its emergency department and another hospital reported a 35% vacancy rate in the medical/surgical area. Compared to a national level of 3.2 hospital RNs per 1,000 residents, Connecticut's rate of hospital employed RNs, 2.8 per 1,000 capita, was 13% below the national average.[4]

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Exhibit 10: Connecticut's Licensed Nurses, FY 1996 to FY 1999

Types of Licensed Nurses	1996 Licenses	1997 Licenses	1998 Licenses	1999 Licenses
Advanced Practice Registered Nurse	1,133 983/140	1,384 1,209/175	1,599 1,407/192	1,932 1,665/267
Licensed Nurse Midwife	117 100/17	127 103/24	133 112/21	142 121/21
Licensed Practical Nurse	11,501 9,946/1,555	11,185 9,676/1,509	11,049 9,657/1,392	11,059 9,624/1,435
Registered Nurse (includes APRN and Midwives)	48,342 39,568/8,774	48,778 39,761/9,017	49,312 40,700/8,612	49,769 40,364/9,405
Instate Registered Nurses Nurses without APRN and Midwife count	38,485	38,449	39,181	38,578
Total Licenses In state/Out of state	61,083 50,597/10,486	61,474 50,749/10,725	62,093 51,876/10,217	62,902 51,774/11,128

Source: *Connecticut Department of Public Health. The table indicates the number of licenses held in Connecticut over four years, first by total per year, then separated by instate/out of state licenses.*

Hospitals employ both licensed and unlicensed personnel to provide clinical nursing services. There are three categories of licensed personnel: registered nurses, advanced practice registered nurses, and licensed practical nurses. The *registered nurse* (RN) may have a diploma, an associate's degree, a bachelor's degree, or even be master's prepared. Many hospitals require a master's degree for their nursing management positions. The *licensed practical nurse* (LPN) has one year of preparation and, in a hospital setting, assists the registered nurse. The *advanced practice registered nurse* (APRN) has advanced clinical preparation beyond a baccalaureate education and usually works in hospital clinics or in private practice. Nurses' aides make up the unlicensed component of the nursing workforce, assisting the registered nurse in clinical as well as non-clinical functions.

Exhibit 11: Skill Mix by Hospital Size, FY 1998

Hospital Type	Percent Licensed	Percent Unlicensed
Large Urban Hospital	72.3	27.9
Medium Sized Urban Hospital	72.8	27.2
Small Urban/Large Community Hospital	80.4	19.6
Small Community Hospital	79.9	20.1
Unique Hospital	79.0	21.0
Teaching Status		
Non-teaching Hospital	79.6	20.4
Teaching Hospital	74.0	26.0
Statewide Average For All Hospitals	**76.5**	**23.5**

Source: *Nurse/Patient Ratio Study, State of Connecticut Office of Health Care Access, 2000. N=31 hospitals.*

The proportion of licensed to unlicensed nursing staff (the "skill mix"), varies by hospital characteristics (Exhibit 11). The average total skill mix for the state's nurses in acute care hospitals for FY 1998 was 76% licensed and 24% unlicensed nurses. Non-teaching hospitals had a higher FY 1998 skill mix, at approximately 80% to 20%. Conversely, teaching hospitals had a lower skill mix of 74% to 26%, where the use of students to supplement staffing is more prevalent.

FACTORS CAUSING THE NURSING SHORTAGE

In the 1990s, several factors combined to generate the nursing shortage. Some of them cluster around the changing delivery and financing of health care and hospitals' responses to these alterations, the attractiveness of a growing number of nursing career options to hospital nursing, and others related to the changing nature and perceptions of the nursing profession. In addition, Connecticut has experienced a tight labor market since the mid-1990s which added to the difficulty of recruiting and retaining qualified staff.

The Competitive Hospital Market and its Effect on Nursing

Concerned with rising health care costs, in 1994 the Connecticut General Assembly established a competitive health care market by largely deregulating the hospital industry and abolishing restrictions on the discounts that hospitals negotiate with managed care organizations. Hospitals gained greater flexibility to respond to market forces and also had to accept greater financial risk. In this environment, managed care flourished, expanding from 800,000 enrollees in FY 1994 to 1.4 million by FY 2000. Advances in medical technology also allowed freestanding ambulatory care centers and physician offices to offer services that had once been restricted to hospitals such as surgery and imaging. This brought them into direct competition with the hospitals. These new competitors are able to concentrate on offering the most profitable services and, unlike hospitals, are not required to treat the indigent.

Total statewide hospital revenues stagnated during the late 1990s, averaging only 1% annual growth as costs were increasing by 3% per annum, and as result, by FY 1998 costs nearly equaled revenues.[6] There were some key factors in the limited

growth of hospital revenues. Managed care companies limited their expenses by negotiating contracts in which hospitals agreed to be reimbursed based upon prospective fee schedules. In addition, they affected hospital revenues and operations through gatekeepers and utilization reviews of services. During this time, the federal and state governments also implemented measures to slow the growth of their health care reimbursements through the initiation of Medicare and Medicaid managed care programs in 1995. The Balanced Budget Amendment of 1997 further constrained Medicare payments, reducing hospital inpatient reimbursements by a projected $70 billion from 1998 to 2002.

Hospitals responded to the financial pressures of managed care and the new competitive market with cost containment measures and competitive strategies such as vertical integration (diversification of services) and horizontal integration (affiliations between hospitals). They also reduced their costs through shorter lengths of stay and by increasing outpatient services. Pursuing horizontal integration, most of Connecticut hospitals entered into affiliations with each other; four integrated health systems have been formed and a fifth is being developed.[7]

These affiliations, mergers, and integration have resulted in restructuring and staff reductions. A Cornell University study found that eight out of ten hospitals that have launched restructuring programs have reduced their nursing staffs.[8] An American Hospital Association (AHA) study in 1997 shows that although the number of RNs employed actually rose between 1992 and 1997, the number of nurses calculated on a per admission basis, taking into account volume and acuity, has actually fallen.[9]

Hospital Nursing Compared to Other Career Options

The nursing profession is in flux and attitudes toward it are changing; these factors negatively affect the recruitment and retention of nurses.[10] Generally, women today have many more career opportunities available to them, including entering other health care professions. Nurses may also use their nursing license outside of a hospital setting. For example, pharmaceutical and insurance companies are now employing more nurses, often for better pay and with a more flexible work schedule than hospitals. Therefore, nursing has become a relatively less attractive career option.

While other opportunities may keep people from entering the nursing profession, a report from the American Hospital Association revealed that RN dissatisfaction with the hospital working environment might be driving nurses out of acute care settings.[11] Shortened lengths of stay have escalated the admission and discharge activity of the units. Staff nurses are spending more time talking to home care agencies, rehabilitation facilities, nursing homes or family members when arranging for discharge, and spend less time on direct patient care. In addition, nurses report that heavy caseloads not only detract from patient care but also erode the quality of the nurses' working life. RNs say they have no time to eat lunch or even take a quick break, much less attend essential continuing education seminars.[12] Many nursing positions have high physical and emotional demands leading to more rapid "burnout." Contributing to

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this burnout factor is the lack of flexible work schedules and regular overtime. Hospitals must staff their units and departments seven days a week, twenty-four hours a day. This means that nurses working at the bedside must work holidays and weekends, rotate shifts and participate in mandatory overtime programs. Salary scales are not generally structured to compensate nurses for the long hours and difficult shifts.

Both voluntary and mandatory overtime are related to staffing supply and demand issues. Overtime occurs when more personnel is needed than was originally projected by nursing management due to changes in either patient census, acuity, or staffing. Depending on the individual hospital's protocols, once internal part time and supplemental staffing pools are exhausted as a means for additional staffing, a request is made for existing on-duty staff to work additional hours. While this "voluntary" overtime can alleviate most of the staff variances, some hospitals have moved to "mandatory" overtime, where in times of extreme shortage, a nurse is "required" to work additional nonscheduled hours. Twenty-four, or 77% of the 31 Connecticut hospitals surveyed reported that nurses might be asked to work up to 16 consecutive hours (Exhibit 12). The remaining seven hospitals varied from 8 to 18 hours as the consecutive length of time a nurse may be required to work in a day. Some caregivers worry that with a growing nursing shortage these extended shifts will become more prevalent.

Exhibit 12: Number of Consecutive Hours Nurses Can Work by Hospital Size, FY 1999

	How many consecutive hours can nurses work?					
Hospital Size	**Response Not Provided**	**Not Allowed**	**12 Hours**	**16 Hours**	**18 Hours**	**Total**
Large Urban Hospital				5		5
Medium Sized Urban Hospital				8	1	9
Small Urban/Large Community Hospital	1	1	2	4	1	9
Small Community Hospital	1			5		6
Unique Hospital				2		2
Totals	2	1	2	24	2	31

Source: *Nurse/Patient Ratio Study, State of Connecticut Office of Health Care Access, 2000.*

Current Economic Conditions

Retaining nursing staff is equally challenging. During a robust economy, workers know they can easily find a new job and, they also know that in non-acute care settings, these jobs will require fewer hours. Although the current economy has an effect on the shortage of nurses, most who have spoken on this issue believe that the structural issues of fewer people going into nursing combined with a significant portion of the nursing population close to retirement age will conspire to preserve the shortage longer than may be attributed to any macroeconomic cycle.[13]

Future Nursing Trends

In its 1999 report, the American Association of Colleges of Nursing (AACN) reported that nursing enrollment in entry-level Bachelor of Science (BSN) programs dropped by 6.6% in 1997 and by 5.5% in 1998.[14] These numbers are part of a four-year trend of declining enrollments. The AACN also noted the falling number of doctoral-prepared nursing faculty. Out of the estimated 9,000 faculty in the nation's AACN member nursing schools, little more than half have their doctoral degree. The sharp decline in master's prepared nursing students going into academic careers along with the rise in average age of current faculty to 49, promises to lead to a nursing faculty shortage, particularly over the next 10 years. An informal poll conducted by the AACN showed that 64 of the 159 member schools reported that difficulties with faculty recruitment were having an adverse effect on their school's ability to increase enrollment.

This decline in young people entering nursing may affect Connecticut sooner than other states. A Department of Health and Human Services survey shows that Connecticut's nurses are closer to retirement than nurses in the rest of the United States. The average age of Connecticut's nurses is 45 years as compared to the national average of 42 years.[15]

In summary, the rising median age of the bedside nurse caregiver, declining nursing school enrollments, and other more attractive opportunities are all factors contributing to the shrinking supply of acute care hospital nurses. At the same time, an aging baby boom population and the increasing acuity of hospital patients support the prediction of nurses who were interviewed for this study that in the near future there will be a sharply increasing demand for RNs. The growing demand for hospital nursing coupled with a shrinking supply may combine to create a potentially precarious situation for hospitals and the state as well.

EFFECTS OF THE NURSING SHORTAGE ON HOSPITALS

The nursing shortage is costly to Connecticut's hospitals in several ways. A major concern for nursing executives in dealing with retention challenges is the cost of turnover. Turnover costs are those direct and indirect costs incurred by the hospital due to nursing terminations.[16] A study done at four metropolitan acute care hospitals in the southeastern U.S. calculated the turnover costs per RN to be between $6,886 and $15,152.[17] The study also found that the four hospitals lost on an average $900,000 per year due to nursing turnover. According to the *Journal of Accountancy*, the cost of replacing registered nurses is about $10,000 per employee.[18] Nursing turnover has several financial implications for health care facilities. Revenues lost due to having to close units because of insufficient staff and overtime expenses paid to RNs to compensate for staffing shortages constitute the greatest proportion of overall nursing turnover costs. In addition, the cost of employee turnover aggravates the hospitals' budget crises as it drains limited resources. Most significantly for patients, a number of studies have revealed that the quality of patient care is compromised when staff shortages result in high nurse-patient ratios.[19]

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An explicit example of these turnover costs is the "signing bonus" war taking place in Connecticut in recent years as hospitals try to recruit nurses away from their competitors. Some hospitals have even begun to award bonuses to employees who refer a nurse for employment at the hospital. Signing bonuses result in increased cost for the hospitals. They also have a negative impact on employee morale as they reward those who change jobs and not those who have remained loyal to their facility.

To cope with the shortage of nurses, hospitals use "Outside Agency" and "Traveling" nurses to supplement their in-house nursing staff. While this type of staffing is usually used for predicted short-term staffing deficiencies such as planned maternity leaves and seasonal periods of rising hospital census, nursing employment agencies have experienced growing requests from Connecticut

hospitals for unplanned shortages as well.[20] There are several agencies used by Connecticut hospitals for supplemental staffing, many of which have sprung up over the last few years due to growing demand for licensed caregivers. Agencies can attract additional caregivers willing to travel the country through housing, bonuses and enticements of working in a different climate. Based on feedback from Connecticut's acute care hospitals, this type of supplemental staffing is critical for them to get through shortages. However, these nurses receive a higher hourly rate than those on staff, thereby raising personnel costs.[21]

The nursing shortage also hurts hospitals because it affects both the quality of care and patient perceptions of hospital services. A 1996 report by the American Hospital Association (AHA) summarized data gathered in focus groups with 300 patients in 12 states plus an opinion survey of another 1,000 patients.[22] It found that nursing care was the key indicator that people used to measure the quality of hospital services. The report went on to say that those surveyed believed that aides with less training were replacing more experienced nurses. The AHA concluded that the public is concerned about the effects of these changes upon the quality of hospital care.

Several surveys on hospital employment issues have revealed that nurses are also concerned about what they consider to be the dominance of a market-driven health care system that has cost cutting as its defining characteristic.[23] They are worried about the effects of staff reductions upon quality of care and safety of patients. Surveys reveal that many RNs assert they are working harder than ever but work satisfaction and morale are suffering. The *American Journal of Nursing* (AJN) Patient Care Survey, which surveyed 7,355 nurses across the country, found that many of the respondents reported staff cutbacks, increased patient loads, and demoralizing work environments.[24] Thirteen percent of the nurses said they would likely leave nursing, often because they felt they could not provide patients with adequate nursing care in the current health care environment.

Examination of the national literature available on the subject of hospital staffing practices shows several interesting trends regarding the impact staffing reduction has on quality. A recent report by the California Nursing Association summarized the following themes on the subject:[25]

- A recent national survey by Boston College School of Nursing of 7,500 RNs reported that 60% of those surveyed had experienced a reduction in the number of RNs providing direct care and 40% reported a substitution of unlicensed personnel for RNs. The study documented increased medication errors, unexpected patient re-admissions, complications, wound infections, patient injuries and patient deaths.
- The Centers for Disease Control and Prevention (CDC) in Atlanta has identified a link between improved nurse-to-patient ratios and lower hospital outbreaks of bloodstream infections.
- A 1994 study by Linda Aiken, Ph.D. and her University of Pennsylvania School of Nursing colleagues found that hospitals that empower nurses to adequately use their professional skills had a 7.7% lower mortality rate than did hospitals that did not place the same emphasis on nursing care.
- Thirteen separate studies on nursing care in the late 1980s and early 1990s analyzed by Patricia Prescott, RN, Ph.D. in late 1993 documented a direct correlation between staffing levels and lower mortality rates and other related patient outcomes.[26]
- A survey by an established nursing professional practice committee at Columbia/HCA Good Samaritan Hospital in San Jose, CA late last year documented a sharp rise in the filing of reports by RNs who were objecting to assignments that were unsafe to the nurse, patient or both. Most of the reports concerned short staffing and a substantial number involved the use of inappropriate or inexperienced personnel.
- A recent study completed by the Minnesota Nurses Association has shown that registered nurses are frequently unable to give medication, administer treatments, and provide teaching or emotional support in a timely manner.[27] The nurses in the study recommended that patient acuity levels and total volume of patients be considered when determining staffing for the units. The American Nurses Association (ANA) Board of Directors also supports this recommendation.[28] The Board approved a set of staffing principles based on the assumption that one size does not fit all when setting nursing care staffing levels. The panel of experts, which developed these staffing principles, discarded the simplistic notions of using nurse-patient ratios or the needs of average patients to determine baseline standards for minimum safe staffing.

CONCLUSION

Nursing executives interviewed by the Lewin Group for this report believe that in the near to middle term, hospitals will be facing a labor crisis that may affect the operations of hospitals' clinical areas. It is unclear to these administrators how they will continue to staff the hospital as the nursing shortage intensifies and the patient population continues to age, creating a greater volume of sicker patients. In addition, there is a concern that supplemental staffing obtained from outside and traveling agencies may also be reduced due to the shortage of experienced nurses.

Exhibit 13: Nursing Vacancies by Specialty, FY 1999

Nursing Specialty	Total Budgeted FTEs	Total Vacancies	Vacancy Rate			
			Total	Minimum	Maximum	Median
Ambulatory Care	282	3	1%	0%	19%	0%
Emergency Department	580	48	8%	0%	32%	7%
OR/Surgical Services	675	49	7%	0%	22%	6%
ICU/CCU	871	47	6%	0%	26%	4%
Labor and Delivery/ Post Partum	470	19	4%	0%	22%	1%
Medical/Surgical	1641	173	11%	2%	35%	8%
Pediatric	54	2	4%	0%	30%	0%
Psychiatry	278	32	11%	0%	32%	4%

Source: *Connecticut Hospital Association 1999 Nursing Survey. N=21 hospitals.*

This has serious ramifications because hospitals rely on these supplemental staffing pools when all internal resources have been exhausted.

Nursing executives know that closing unit beds as a solution to the nursing shortage will only exacerbate their budget dilemma. The overhead costs of keeping a unit open will remain the same because the revenue stream will decrease as beds are closed. The staffing challenges over the next several years will call for some creative interventions from all concerned stakeholders.

Hospital administrators are in the precarious position of maintaining the quality of patient care and at the same time ensuring the fiscal stability of their facilities. Laying off registered nurses and replacing them with aides may have worked as a short term solution to their budget dilemmas, but due to resignations and retirements, hospitals found that they needed to re-hire some of these nurses. When they tried to fill these vacancies in today's labor market, many of them found it difficult to attract new recruits because hospitals had acquired a public image as negative work environments. In a report on the new nursing shortage, the American Hospital Association concluded that registered nurses' dissatisfaction with working conditions and concern about quality of patient care may be driving the current shortage in acute care hospitals. There is a considerable body of scientific literature showing that nurses are critical to the quality of care and the health of patients. This research should influence the decision-making process concerning staffing patterns for clinical areas, for it may lead to more viable long term solutions that meet budgetary requirements.

RECOMMENDATIONS FROM THE HOSPITAL STUDY FOCUS GROUP ON WORKFORCE ISSUES

In the summer of 2000, the Office of Health Care Access (OHCA) sponsored a focus group on hospital workforce issues that included hospital administrators, professional associates, labor representatives, and state officials. During the prior winter, OHCA surveyed nurses at the state's 31 acute

care hospitals. Addressing labor force issues, focus group and survey participants offered the following recommendations:

- Hospitals should promote incentives and initiatives, offer competitive and fair wages, improve scheduling flexibility and reduce the intensity of the work environment.
- Improve the image of nursing as a career to help alleviate the nursing shortage. Partnering/mentoring programs in high schools and middle schools could be developed to raise awareness of nursing as a career. Begin initiatives to promote nursing as a second career.
- Hospitals and educators should collaborate more to ensure that the curriculum of training programs meet hospitals' needs. Nursing education programs should be standardized and the curriculum should be restructured to include more clinical training. Provide tuition reimbursement/ college scholarships for nursing students.
- Loosen restrictions on the recruitment of foreign nurses and provide cross-state licensure.
- The State should provide more relevant information regarding work-force issues in Connecticut. Examples of data that should be more readily available include information on job vacancies, education and training requirements for various health care occupations, and health care professional productivity measures.
- The State should standardize work-force hospital data in order to be able to analyze the relationship between staffing levels and patient care outcomes.

NOTES

[1]"Understaffed" refers to two situations: a) When the staff numbers less than the amount of Full Time Equivalent positions that were budgeted for by the hospital; or b) When the staff numbers less than the amount of Full Time Equivalents required by law for the particular units within an acute care hospital, such as the Emergency Room or the Intensive Care Unit. When staffing falls below the legal minimum for certain units, government reimbursement can be affected.

[2]Nurses may hold licenses in multiple states.

[3]Connecticut Hospital Association 1999 Nursing Survey.

[4]*The Registered Nurse Population, Findings from the National Sample Survey of Registered Nurses, March 1996*, Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, 1997

[5]"Large Urban Hospitals" include: Bridgeport, Hartford, Saint Francis, Saint Raphael's, and Yale-New Haven.

"Medium Sized Urban Hospitals" include Danbury, Lawrence and Memorial, Middlesex Memorial, New Britain General, Norwalk, Saint Mary's, Saint Vincent's Medical Center, Stamford, and Waterbury.

"Small Urban/Large Community Hospitals" include William Backus, Bristol, Charlotte Hungerford, Day Kimball, Greenwich, Griffin, Manchester Memorial, Veteran's Memorial Medical Center, and Windham Community Memorial.

"Small Community Hospitals" include Bradley Memorial, Johnson Memorial, Milford, New Milford, Rockville General, and Sharon.

"Unique Hospitals" include John Dempsey and Connecticut Children's Medical Center.

[6]State of Connecticut Office of Health Care Access Hospital Budget Reporting System.

[7]Ibid.

[8]Aiken, L.H., Sochalski, J., and Anderson, G.F. (1996) Nursing Practice Alert. November 1, 1999.

[9]*The American Prospect.* (February 2000). Nurse, Interrupted: 26-30.

[10]Nursing School Enrollment Continues to Fall. (1998/9) *NEWSLINK*, 5(2) & Buerhas, P. and Staiger, D. (1999) Trouble In The Nurse Labor Market? Recent Trends and Future Outlook. *Health Affairs*, 18(1). Demand, Need—Nursing's Numbers Revisited. (1996) *Nursing-ANA Policy Series*, Supply, October. Malone, B., Ph.D., RN, FAAN and Marullo, G., MSN, RN. (1997) Workforce Trends Among U.S. Registered Nurses. *Nursing World*, October.

[11]*The American Prospect*, op. cit.

[12]Nurses for a Healthier Tomorrow—ANA Publication, "ANA Joins Coalition Formed to Promote Nursing." (The American Prospect, 2000)

[13]State of Connecticut Office of Health Care Access Hospital Study Focus Group on Workforce Issues, Summer 2000.

[14]Office of Health Care Access, *Nurse-to Patient Ratio Study*, February 2000 & Nursing School Enrollment Continues to Fall, NEWSLINK, Volume 5, No. 2, Winter 1998/99.

[15]*The Registered Nurse Population, Findings from the National Sample Survey of Registered Nurses, March 1996* Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services, 1997

[16]Direct costs are defined as those that are directly associated with staff nurse recruitment. Indirect costs are defined as those incurred after the new RN has been hired to fill a vacancy.

[17]Bland Jones, C. (1990) Staff Nurse Turnover Costs: Part I, A Conceptual Model. *Journal of Nursing Association* 20(4): 18 – 32 & Bland Jones, C. (1992) Calculating and Updating Nursing Turnover Costs *Nusing Economics* 10(1): 39 – 45 & 78.

[18]*Journal of Accountancy*. (June 1998) Employees—Finding Them, Losing Them, Replacing Them: 96. Also see Blaufuss, J. Maynard, J., and Schollars, G. (1992) Methods of Evaluating Turnover Costs. *Nursing Management* 23(2): 52 – 59.

[19]Aiken and Anderson, op. cit.

[20]State of Connecticut Office of Health Care Access Hospital Study Focus Group on Workforce Issues, Summer 2000.

[21]Ibid.

[22]American Prospect, op. cit., 29.

[23]Shindul-Rothchild, J., Ph.D., RN, CS, Long-Middleton, E., MN, RN, FNP, and Berry, D., MS, RNC. (1997) 10 Keys to Quality Care. *American Journal of Nursing*, 97(11): 35 - 43.

[24]Ibid, 35.

[25]Aiken, et. al., op. cit. See also Shindul-Rothschild, et. al. op. cit.

[26]Prescott, Patricia A. Nursing: An Important Component of Hospital Survival Under a Reformed Health Care System.

[27]Aiken, et. al., op. cit.

[28]Ibid; *Nurse Week/Health Week*. (1999) What Works? Nurse Patent Ratios, Professionalism and Safety, October 26th.

[29]"What Works? Nurse Patent Ratios, Professionalism and Safety", October 26, 1999 and American Nurses Association. (1999) Nursing-Sensitive Quality Indicators for Acute Care Settings and ANA's Safety & Quality Initiative.

[30]Nursing Practice Alert, November 1, 1999. (The American Prospect, 2000)