

# UNIVERSITY OF HAWAI'I SYSTEM

## ANNUAL REPORT

REPORT TO THE 2007 LEGISLATURE

Annual Report on  
The Status of Nursing for 2007

SCR 76, SD1, 2006

November 2006

**FINAL REPORT  
of the  
Senate Concurrent Resolution 76, S.D.1 Workgroup  
To the  
Hawai'i State Legislature**

In Accordance with  
Senate Concurrent Resolution 76, S.D.1

Prepared by  
The Hawai'i State Center for Nursing

November 2006

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## REPORT OF THE HAWAII STATE CENTER FOR NURSING TO THE HAWAII STATE LEGISLATURE SENATE CONCURRENT RESOLUTION 76, SD1

### EXECUTIVE SUMMARY

#### BACKGROUND

Senate Concurrent Resolution 76, S.D.1 is titled “*Urging Healthcare Facilities in The State of Hawaii to Implement the ‘Utilization Guide for The American Nurses Association Principles For Safe Staffing’*”. It requests that the Hawaii State Center for Nursing convene a working group of stakeholders including the Department of Health, the Hawaii Long Term Care Association, the Hawaii Nurses’ Association, the Hawaii State Center for Nursing, the Healthcare Association of Hawaii, and the State Board of Nursing to address issues of appropriate staffing levels and patient safety.

The Hawaii State Center for Nursing convened the Workgroup for a total of four meetings between July and November, 2006. The Workgroup was composed of eight members pursuant to Senate Concurrent Resolution 76, S.D.1. Members included Aggie Pigao Cadiz, Hawaii Nurses’ Association; Clare Kohatsu and Dianne Okumura, Department of Health, Office of Health Care Assurance; Dr. Sandra LeVasseur, Hawaii State Center for Nursing; Rich Meiers, Healthcare Association of Hawaii; Bob Ogawa, Hawaii Long Term Care Association; and Kathy Yokouchi, Board of Nursing. Barbara Mathews of the Hawaii State Center for Nursing facilitated Workgroup Meetings.

#### KEY ISSUES AND FINDINGS

- Decreasing reimbursement to healthcare facilities since 1995 has seriously impacted resources available to provide quality healthcare.
- The nursing<sup>1</sup> shortage is projected to become increasingly severe with an anticipated shortage of 2,670 Registered Nurses by 2020 in Hawaii. This will occur at the same time that our population is aging with increased demands for healthcare. Unless addressed, a shortage of registered nurses has the potential to negatively impact staffing and the availability of healthcare services.
- An extensive review of the literature shows no conclusive support for specific minimum nurse-patient ratios for acute care hospitals particularly in the absence of adjustments related to different levels of nursing care providers and for the mix of patients.
- Research suggests a correlation between staffing levels, educational levels of registered nurses and other variables in the care environment with improved outcomes for patients.
- The American Nurses’ Association Principles for Nurse Staffing are the result of a panel of experts who developed a framework for decision making for nurse staffing and for evaluating the adequacy of such staffing. The Principles consider multiple variables and do not support static or minimum staffing ratios due to the complexity and variability of patient needs.

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<sup>1</sup> Nurse or nursing in this document refers to ‘registered nurses’.

- The Utilization Guide for the American Nurses' Association Principles for Nurse Staffing elaborates on the Principles and recommends a methodology for evaluation of patient classification systems which are critical to decision making about nurse staffing on a unit level.
- The Utilization Guide for the ANA Principles for Nurse Staffing recommends an analysis of standardized indicators that measure patient care outcomes and nurse outcomes. There are a variety of standardized indicators and data bases in current use including the National Data Base for Nursing Quality Indicators (NDNQI), the California Nursing Outcomes Data Base (CALNOC) and the National Quality Forum (NQF).

## RECOMMENDATIONS

- Widely disseminate the ANA Principles for Nurse Staffing and the ANA Utilization Guide for the Principles for Nurse Staffing to all health care organizations in the state. Encourage healthcare facilities to consider how they may be applicable in their setting.
- Widely disseminate this report and encourage nurses, nursing leaders and administrators to become familiar with the recommendations and with current research which advances knowledge about staffing and patient outcomes.
- Continue Workgroup meetings and encourage nurses, nursing leaders, physician leaders, administrators and other key stakeholders to participate in dialogue and discussion on how to improve patient safety outcomes through analysis of nurse staffing, education levels, competence and quality of the care environment.
- Encourage participation in local conferences and educational offerings which discuss best practices and current research. Examples of such offerings held during 2006 include:
  - The Healthcare Association JCAHO Conference was held on September 13 and 14, 2006, to focus on standards for accreditation. Included as a focus was staffing effectiveness and patient outcomes.
  - The AONE Conference was held on November 3, 2006. The featured speaker was Linda Aiken, PhD, FAAN, FRCN, RN. Dr. Aiken is one of the premier nurse researchers in the county with a focus on health workforce and outcomes. Her research on the correlations between nurse staffing, educational preparation of nurses, the care environment and patient outcomes served to inform and educate the community.
- Continue to fund the University of Hawai'i System Nursing Programs on all islands to increase educational capacity.
  - Additional faculty positions in all nursing programs
  - Simulation laboratories on all islands
  - Infrastructure support
  - Planning for future facilities development

- Support nursing scholarships for students at all levels including undergraduate, masters, doctorate and postdoctoral fellowships. Make scholarships a priority by allocating monies within general funds so that support is ongoing.
- Address the crisis in reimbursement to healthcare facilities to ensure that adequate resources can be allocated to nurse staffing by both acute care and long term care facilities.
- Continue to offer educational programs to bring the latest in research and evidenced based findings by building a coalition of nursing and healthcare organizations.

The Workgroup would like to thank the Legislature of 2006 for the opportunity to focus on the important issues that are integral to nurse staffing, to review the literature, to analyze best practices and to make recommendations. The Workgroup will continue, under the leadership of the Hawai'i State Center for Nursing, to serve as a catalyst for the nursing profession and the healthcare community to promote discussion, dialogue and a continuing focus on research and innovation.

**Workgroup Members** The Workgroup for a total of four meetings between July and November, 2006. The Workgroup was composed of eight members pursuant to Senate Concurrent Resolution 76, S.D.1.

**Aggie Pigao Cadiz, RN, BSN**  
Executive Director, Hawai'i Nurses' Association

**Clare Kohatsu, RN**  
Training Coordinator, Department of Health, Office of Health Care Assurance

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President and Chief Executive Officer, Healthcare Association of Hawai'i

**Bob Ogawa**  
President, Hawai'i Long Term Care Association

**Dianne Okumura, RN, MPH**  
Chief, Department of Health, Office of Health Care Assurance

**Kathy L. Yokouchi, MBA, BBA, BA**  
Executive Officer, Board of Nursing

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## REPORT OF THE HAWAII STATE CENTER FOR NURSING TO THE HAWAII STATE LEGISLATURE SENATE CONCURRENT RESOLUTION 76, S.D. 1

### **BACKGROUND**

Senate Concurrent Resolution, S.D. 1 is titled “*Urging Healthcare Facilities in the State of Hawaii to Implement the Utilization Guide for the American Nurses Association Principles for Safe Staffing*”. It requests that the Hawaii State Center for Nursing convene a working group of stakeholders including the Department of Health, the Hawaii Long Term Care Association, the Hawaii Nurses’ Association, the Hawaii State Center for Nursing, the Healthcare Association of Hawaii, and the State Board of Nursing to address issues of appropriate staffing levels and patient safety. It further resolves that Hawaii’s healthcare facilities provide the Center for Nursing annual data related to concerned staffing forms and the use of traveling or agency nurses including hours worked, mandatory and voluntary overtime hours, number and type of negative patient care outcomes and number of nursing employee work-related injuries and absenteeism.

The Hawaii State Center for Nursing was established by the Legislature in 2003 by Act 198 (HB 422 HD2, SD2, CD1, SB 2072) and became operational in 2005. The focus of the Center is to address the many and complex issues which underlie the registered nursing shortage including nursing workforce data, recruitment and retention of nurses and faculty and research on best practices and quality outcomes. The Center is involved in a number of activities which are designed to ameliorate the nursing shortage and served as a neutral party to convene this Workgroup and to write this report which represents a concurrence of all members.

### **WORKGROUP ACTIVITIES**

The Center for Nursing convened the Workgroup for a total of 4 meetings between July and November, 2006. The Workgroup was composed of 8 members pursuant to Senate Concurrent Resolution 76, S.D. 1. Members included Aggie Pigao Cadiz, Hawaii Nurses’ Association; Clare Kohatsu and Dianne Okumura, Department of Health, Office of Health Care Assurance; Dr. Sandra LeVasseur, Hawaii State Center for Nursing; Rich Meiers, Healthcare Association of Hawaii; Bob Ogawa, Hawaii Long Term Care Association; and Kathy Yokouchi, Board of Nursing. Barbara Mathews of the Hawaii State Center for Nursing facilitated Workgroup Meetings.



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**REVIEW OF SENATE CONCURRENT RESOLUTION 76, S.D. 1**

The Resolution highlights the issue of nurse staffing which is an ongoing concern in a time of increased intensity and complexity of caring for patients and an environment of nursing shortage. The Workgroup appreciates the opportunity to examine this issue and to provide information and education to the Legislature, the healthcare community and the nursing profession. Nurse staffing is a complex issue and lends itself to discussion, dialogue and collaboration among all stakeholders.

The Resolution supports appropriate nurse staffing for the benefit of patients, families, nurses and the community at large. It suggests the “*ANA Utilization Guide for the ANA Principles for Nurse Staffing*” as a reference for decision making at the level of the healthcare organization. As such, the Resolution has provided a positive opportunity for various sectors of the community to come together with a common interest in staffing which supports quality of care, patient safety and a positive working environment for nurses.

However, the wording of the Resolution is unclear and provides neither the guidance as to the specific intent nor the outcome desired. Some of the issues include:

- Language exists in the Resolution to suggest that standards for RN to patient ratios be set utilizing the ANA Utilization Guide for the ANA Principles for Nurse Staffing, while the guidelines emphasize the complexity of the environment at the unit or department level of the organization and provide a guide for decision making.
- The Resolution asks that data and information be provided to the Center for Nursing. This assumes a regulatory function and/or a collective bargaining function that the Center does not have and is beyond the scope of the Resolution and this Workgroup.
- Some of the information identified in the Resolution (Concerned Staffing Forms) is documentation submitted by individual nurses to their managers in a healthcare organization to facilitate discussion and dialogue between administrators and staff about safe and appropriate staffing. This information, while important in problem solving at the organizational level, does not constitute data which is valid and reliable to guide decision making.
- The Resolution also requests information from healthcare facilities on patient and employee outcomes. Facilities are reviewed by accrediting and regulatory agencies such as Department of Health and the Joint Commission on Accreditation of Healthcare Organizations during the process of accreditation and/or licensing of all healthcare organizations in our state. Included in the review process are patient and human resource outcomes as well as staffing effectiveness and RN competencies. Such data is proprietary to the individual organizations.

## **KEY ISSUES AND BARRIERS TO NURSE STAFFING**

The healthcare environment is a key industry within the Hawai'i economy and is the second largest private industry in the State.<sup>1</sup> The health services sector is one of the larger employers in our state, with average compensation close to 23% more than the State average.<sup>1</sup> Since the enactment of the Balanced Budget Act (BBA) of 1995, the negative impact to facilities on reimbursement has been significant.<sup>1</sup> Due to the following factors, the healthcare facilities are in crisis:

- The average annual BBA impact from 1998 - 2003 was a reduction of about 2% of total net patient revenues.<sup>1</sup>
- Hawai'i hospital financial data shows that expenses exceeded revenue from 2000 with continuing annual losses.
- Hospital expenses continue to show significant increases including costs for labor, technology and pharmaceuticals.<sup>1</sup>
- Hospitals and long term care facilities provide a significant service through support of medical education, community programs and care for the uninsured or those without the ability to pay.<sup>1</sup>
  - Unfunded amounts for medical education totaled \$119,100,000 from 2000 through 2005<sup>1</sup>
  - Unfunded amounts for community programs totaled \$46,900,000 from 2000 through 2005<sup>1</sup>
  - Charity care or bad debt totaled \$571,200,000 from 2000 through 2005<sup>1</sup>
- As the elderly population grows, a higher percentage of health care will be paid for by Medicare and Medicaid, and neither payor covers the cost of services provided.<sup>1</sup> Government payments amount to only about 37 cents for every dollar of patient costs.<sup>2</sup>
- As the elderly population grows, utilization of services will increase. Provision of more services does not result in additional reimbursement.<sup>1</sup>
- As the disenfranchised population grows, unfunded care will increase.
- Financial losses may result in reduced access to quality care and fewer registered nurses caring for patients.<sup>1</sup>

## **NURSING SHORTAGE**

Hawai'i is experiencing a registered nursing (RN) shortage now, and it is expected to worsen. Hawai'i's population is aging faster than the rest of the country, which will increase the demand for nursing care. Between 2000 and 2020 the number of people aged 60 and older will increase by almost 75%. Simultaneously, the RN workforce is also aging; in 2003, the mean age of Hawai'i's RNs was 49.3 years and is increasing.

The mean age of nursing faculty is estimated to be in the mid-fifties, and retirements are anticipated to create additional faculty vacancies.

In 2006, Hawai'i experienced a shortage of 960 RNs which is estimated to grow to 2,220 RNs by 2016 and to 2,670 RNs by 2020. Estimates indicate by 2015, 31% of Hawai'i's RN workforce will retire, and by 2020, 61% will retire.

Applicants to nursing programs statewide are at an all time high. However, in spite of increased educational capacity, Hawai'i's public nursing schools are turning away qualified applicants due to lack of faculty, technology, infrastructure and facilities. In Fall Semester 2006, 320 qualified nursing applicants were turned away from public nursing programs. Disparity in faculty salaries compared to the practice environment further contributes to faculty shortages.

A shortage of registered nurses means reduced quality care in Hawai'i. Without enough registered nurses, access to care is decreased, supply of health care services becomes limited or unavailable, rural and underserved communities are most affected and patient safety is at risk.

### **MEASURING STAFF LEVELS AND PATIENT OUTCOMES**

The challenge faced by most attempting to synthesize evidence is the lack of standardization in definition and measurement of constructs such as 'nurse staffing levels'. This lack of consistency creates major limitations when attempting to compare variables across studies. As shown in Table 1, studies can use a variety of variables to measure nurse staffing. Of these measures, many investigators select, for examination, the *structural elements of care*.<sup>3-6</sup>

However, a variety of different concepts can be used to represent this construct including number of nurses, number of nurse hours, percentage or ratios of nurses to patients, skill mix, organization of nursing care delivery or organizational culture, nurse workload, nurse stress, or qualification of nurses.

**Table 1 Measures of Nurse Staffing**

<b>Nurse Staffing Measure</b>	<b>Definition</b>
Nurse to patient ratio	Number of patients cared for by one nurse typically specified by job category (RN, LPN); this varies by shift and nursing unit; some researchers use this term to mean nurse hours per inpatient day
Total nursing staff or hours per patient day	All staff or all hours of care including RN, LPN, aides counted per patient day (a patient day is the number of days any one patient stays in hospital, i.e., one patient staying 10 days would be 10 patient days)

RN or LPN FTEs per patient day	RN or LPN full time equivalents per patient day (FTE is 2080 hours per year and can be composed of multiple part-time or one full-time individual)
Nursing skill (or staff) mix	The proportion or percentage of hours of care provided by one category of caregiver divided by the total hours of care (A 60% RN skill mix indicates that RNs provide 60% of the total hours of care)
Proportion of hospital staff nurses with higher levels of education	The percentage of RNs with a bachelor's, master's or another degree compared to percentage of RNs holding diploma or associate degrees.

Other, less frequently used constructs are the *intervention or process measures of care* including studies based on the 'science of nursing' or 'nurses as the intervention'. For the purposes of this paper the intervention or process measures of care will not be discussed in this report.

### **NURSE STAFFING LEVELS AND PATIENT OUTCOMES: THE EVIDENCE**

The Institute of Medicine's (IOM) report, "*To Err is Human: Building a Safer Health System*" (2000) <sup>7</sup> acknowledges that

...the availability of nurses, the organization of nursing care, and the types of nursing interventions vary by institution. Structuring nurse staffing (e.g., availability of nurses, organizational models of nursing care) and care interventions to meet "safe thresholds" could be considered a patient safety practice. However, no studies have evaluated thresholds explicitly. (p. 424.)

Many are concerned about the capacity of registered nurses to maintain patient safety. The registered nurse role encompasses both surveillance and care for early identification and intervention of complications and problems in care. As Aiken <sup>8</sup> reports '*as the registered nurse shortage continues, with burdensome nurse workloads, high turnover, and many unfilled hospital positions, concern is growing about the ability of nurses to fill the role effectively.*'

Over the past 20 years the bulk of studies have examined associations between nurse staffing and patient outcomes in acute care setting. However, some work has examined the correlation between nurse staffing and quality in nursing facilities.

- **Acute Care**

Numerous cross-sectional and fewer longitudinal studies have been conducted examining associations between nurse staffing levels and adverse events (i.e., failure to rescue, inpatient mortality, medication errors, falls, decubitus ulcers, etc.). Three systematic reviews<sup>9-11</sup> were identified for this report and supplemented with

recently published peer-reviewed articles examining nurse staffing and patient outcomes. These systematic reviews were chosen to report the evidence because they adhere to a strict scientific design; making the results more comprehensive, minimizing the chance of bias, and so ensuring reliability of the available evidence.

The evidence, presented in Table 2, indicates that the research to date remains inconclusive of whether patient safety is significantly affected by nurse staffing levels. Numerous major limitations have been identified such as inconsistencies in study designs, methodology, and measurement hampering efforts to compare findings across studies.

Thus, as shown in Table 2 the literature provides no conclusive support for specific minimum nurse-patient ratios for hospitals, especially in the absence of adjustments for skill and patient mix.<sup>10</sup> This is highlighted by preliminary findings which suggest there may be associations between hospital staff nurses level of education and patient outcomes. Aiken<sup>12</sup> reports that the higher the proportion of hospital staff nurses with bachelor's, master's or other type of degree is related to reductions in mortality and failure to rescue following common surgical procedures.

These findings begin to underscore the *'point that having more nurses, rather than more of the right ones and in the right environment, does not necessarily achieve better outcomes.'*<sup>13</sup>

- **Nursing Facilities**

The phase II study conducted by the Centers for Medicare and Medicaid Services (CMS)<sup>14</sup> examining the relationship between nursing staffing and quality of care at more than 5,000 nursing facilities in 10 states revealed that among long-term residents, nurse staffing levels below 4.1 hours per resident day (below 1.3 hours per resident day for licensed nurses (RNs, LPNs) and below 2.8 hours per resident day for nurse aides and assistants could have adverse consequences such as pressure sores and urinary incontinence.

### **THE AMERICAN NURSES' ASSOCIATION PRINCIPLES FOR NURSE STAFFING**

In 1997, The American Nurses' Association brought together a panel of experts to address issues related to nurse staffing. The expert panel believed<sup>15</sup> that

**determining minimum staffing levels was neither feasible nor appropriate beyond the level at which nurses provide patient care. They also believed that the establishing minimum staffing levels, even when done at the appropriate level, should be the last of all options. This statement was based on their belief that the complexity and variability of patient needs is so great that static minimums would be meaningless and possibly harmful<sup>16</sup>. (p.5)**

The expert panel developed the Principles<sup>16</sup> as a framework for decision making for nurse staffing and for evaluating the adequacy of such staffing. The panel identified

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nine principles contained in four categories: Patient Care Unit Related; Staff Related; Organization Related; and Evaluation and Benchmarking Related to Staffing.

- **The Patient Care Unit Related Principles**<sup>16</sup> questioned the concept of determining nursing hours of care by one size or formula. The Principles recommend that staffing decisions be based on the intensity of the patient population and the roles and responsibilities of the nursing staff. Important factors to be taken into consideration include number of patients, level of intensity, geography of unit and level of preparation and experience of those providing care. In addition, patient characteristics need to be considered such as severity of illness, age, functional ability, availability of social supports and cultural diversity. Unit functions such as participation in governance and quality improvement also need to be included in determining staffing needs.
- **The Staff Related Principles**<sup>16</sup> recognize the importance of the responsibilities, and competencies of each nursing staff member. The Principles recommend that staffing decisions include experience and education of the nurse, tenure on the unit, level of control of the practice environment and involvement in related activities such as quality improvement and research.
- **The Institution/Organization Related Principles**<sup>16</sup> reflect the commitment of the organization to filling budgeted positions in a timely way, documenting competencies for all staff and providing adequate preparation, resources and information for individuals involved in decision making. The Principles recommend that staffing decisions recognize varied needs of patients and staff and provide effective support services to the nurses, access to communication technology and sufficient time to ensure ethical decision making, care coordination, supervision of unlicensed assistive personnel and resources necessary to ensure competency. In addition, the Principles include the right for staff to report unsafe conditions or inappropriate staffing and a logical method for determining staffing levels and skill mix of nursing personnel.
- **Evaluation and benchmarking**<sup>16</sup> related to staffing are necessary to ensure that quality patient care is being provided. This includes use of such nursing-sensitive indicators as those found in the ANA National Database of Nursing Quality Indicators (NDNQI) and their correlation with other patient care trends. In addition, indications of the quality of work life should be evaluated including work-related staff illness and injury, turnover/vacancy rates, overtime rates, use of supplemental staffing, human resource policies and benefits, nurse satisfaction and compliance with applicable regulations.

#### **THE ANA PRINCIPLES STATE:**

The ultimate goal of staffing should be to ensure that

...the quality of patient care is maintained, the quality of organizational outcomes is met and that the quality of nurses' work life is acceptable.<sup>17</sup> **Changes in staffing levels, including changes in the overall number and/or mix of nursing staff should be based on analysis of standardized, nursing-sensitive indicators. The effect of these changes should be evaluated**

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**using the same criteria.** Caution must be exercised in the interpretation of data related to staffing levels and patterns and patient outcomes in the absence of consistent and meaningful definitions of the variables for which data are being gathered.<sup>17</sup>

- **Recommendations** contained in the ANA Principles are as follows:
  - A distinct standardized definition of unit intensity must be developed. Factors to be taken into consideration in the development of such a definition include number of patients within the unit, levels of intensity of patients for whom care is being provided, contextual issues including architecture and geography of the environment and available technology
  - Data should be gathered to address the relationship between staffing and patient outcomes including but not limited to improvement in health status, achievement of appropriate self care, demonstration of health promoting behaviors, patient length of stay or visit, health related quality of life, patient perception of being well cared for and symptom management based on guidelines.

**The ANA Principles** serve as a resource and guide for decision making in healthcare facilities to ensure that staffing is safe and appropriate for a given patient population, to ensure quality of care for patients and families and quality of the work environment for the staff. The Principles emphasize that the practice of nursing is not based on a technical model, but a professional model which is knowledge based. The Principles also put an end to the idea of “a nurse-is-a-nurse-is-a-nurse” and the notion of one size fits all in terms of staffing. Rather, the Principles emphasize that the complexity of nursing practice and the complexity of patient conditions and needs has increased over time, and that the decisions about nurse staffing must reflect that complexity.

### **THE UTILIZATION GUIDE FOR THE AMERICAN NURSES’ ASSOCIATION PRINCIPLES FOR NURSE STAFFING**

This guide was developed to elaborate on the Principles for Nurse Staffing and to assist organizations in discussion and dialogue about specific factors critical to implementation of the Principles.

- **Determining patient classification and measuring nursing workload** is an important aspect of determining appropriate nurse staffing. Patient classification is defined as the process of evaluating and categorizing patients according to their nursing care requirements over a period of time. There are a variety of systems which classify patients according to the acuity of the patient and the intensity of the nursing needs. Benefits to classification systems include determination of appropriate staffing for the next shift, tracking and trending patient care and staffing information and guiding budget decisions. Patient classification systems should be valid and reliable so that the data being measured and collected can be relied upon for decision making. Both validity and reliability must be assessed on an ongoing basis. To the degree possible, registered nurses should have input into purchasing decisions of classification systems by using a checklist to provide guidance on decision making.

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- **The role of professional nursing judgment** is a critical component when making staffing decisions and must be utilized in conjunction with a patient classification system. Application of the Principles requires subjective input into staffing decisions about nurses at the level of patient care delivery.
  - **Resource materials** should be available to registered nurses to assist in making staffing decisions.
  - **Evaluation of patient classification systems** as well as evaluation of sufficiency of staffing is critical to informed decision making. The American Nurses' Association has developed indicators in the National Database for Nursing Quality Indicators.<sup>18</sup> Indicators for evaluation are as follows:
    - Total nursing care hours provided per patient day
    - Mix of registered nurses, licensed professional nurses and assistive personnel caring for the patient
    - Contract agency staff
    - Pressure ulcers
    - Patient falls
    - RN staff satisfaction
    - Pediatric pain assessment
    - Pediatric peripheral IV infiltration
    - Restraint utilization in psychiatry
    - RN staff satisfaction
    - RN voluntary turnover
    - Musculoskeletal injuries in nursing staff

Data is collected at the nursing unit level and applies to the acute care environment. More information on the ANA nursing-sensitive quality indicators, definitions and NDNQI can be found at <http://www.nursingworld.org/quality/> or <http://www.nursingworld.org/quality/database.htm>.

According to the Principles, the ultimate goal of staffing should be to ensure that 'the quality of patient care is maintained, the quality of organizational outcomes is met and the quality of nurses' work life is acceptable'.<sup>17</sup> Changes in staffing should be based on analysis of standardized, routinely collected indicators that capture both patient care outcomes and nurse outcomes. Critical to this process is the standardized definitions and collection methods of all indicators."<sup>16</sup>

### **KEY ISSUES AND FINDINGS**

- Decreasing reimbursement to healthcare facilities since 1995 has seriously impacted resources available to provide quality healthcare.
- The nursing shortage is projected to become increasingly severe with an anticipated shortage of 2,670 Registered Nurses by 2020 in Hawai'i. This will occur at the same time that our population is aging with increased demands for healthcare. Unless addressed, a shortage of registered nurses has the potential to negatively impact staffing and the availability of healthcare services.



- An extensive review of the literature shows no conclusive support for specific minimum nurse-patient ratios for acute care hospitals particularly in the absence of adjustments related to different levels of nursing care providers and for the mix of patients.
- Research suggests a correlation between staffing levels, educational levels of registered nurses and other variables in the care environment with improved outcomes for patients.
- The American Nurses' Association Principles for Nurse Staffing are the result of a panel of experts who developed a framework for decision making for nurse staffing and for evaluating the adequacy of such staffing. The Principles consider multiple variables and do not support static or minimum staffing ratios due to the complexity and variability of patient needs.
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## **RECOMMENDATIONS**

- Widely disseminate the ANA Principles for Nurse Staffing and the ANA Utilization Guide for the Principles for Nurse Staffing to all health care organizations in the state. Encourage healthcare facilities to consider how they may be applicable in their setting.
- Widely disseminate this report and encourage nurses, nursing leaders and administrators to become familiar with the recommendations and with current research which advances knowledge about staffing and patient outcomes.
- Continue Workgroup meetings and encourage nurses, nursing leaders, physician leaders, administrators and other key stakeholders to participate in dialogue and discussion on how to improve patient safety outcomes through analysis of nurse staffing, education levels, competence and quality of the care environment.
- Encourage participation in local conferences and educational offerings which discuss best practices and current research. Examples of such offerings held during 2006 include:
  - The Healthcare Association JCAHO Conference was held on September 13 and 14, 2006, to focus on standards for accreditation. Included as a focus was staffing effectiveness and patient outcomes.
  - The AONE Conference was held on November 3, 2006. The featured speaker was Linda Aiken, PhD, FAAN, FRCN, RN. Dr. Aiken is one of the

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premier nurse researchers in the county with a focus on health workforce and outcomes. Her research on the correlations between nurse staffing, educational preparation of nurses, the care environment and patient outcomes served to inform and educate the community.

- Continue to fund the University of Hawai'i System Nursing Programs on all islands to increase educational capacity.
  - Additional faculty positions in all nursing programs
  - Simulation laboratories on all islands
  - Infrastructure support
  - Planning for future facilities development
- Support nursing scholarships for students at all levels including undergraduate, masters, doctorate and postdoctoral fellowships. Make scholarships a priority by allocating monies within general funds so that support is ongoing.
- Address the crisis in reimbursement to healthcare facilities to ensure that adequate resources can be allocated to nurse staffing by both acute care and long term care facilities.
- Continue to offer educational programs to bring the latest in research and evidenced based findings by building a coalition of nursing and healthcare organizations.

The Workgroup would like to thank the Legislature of 2006 for the opportunity to focus on the important issues that are integral to nurse staffing, to review the literature, to analyze best practices and to make recommendations. The Workgroup will continue, under the leadership of the Hawai'i State Center for Nursing, to serve as a catalyst for the nursing profession and the healthcare community to promote discussion, dialogue and a continuing focus on research and innovation.

**Table 2 Clinical and Statistical Significance of Findings from Studies on the Effects of Nurse Staffing on Patient Outcomes (adapted from Lang et al. 2004<sup>10</sup>, pp. 330-331)**

Outcome	Effect Size Judged to Be Unimportant		Importance of Effect Size Uncertain		Effect Size Judged to Be Important	
	NS	P<0.05	NS	P<0.05	NS	P<0.05
<b>1. Failure to Rescue</b>	Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>*19,20</sup> Silber, 1995 <sup>21</sup>					Aiken, 2002 <sup>‡,∞22</sup> Needleman, 2001 <sup>†19,20</sup> Needleman, 2001 <sup>†19,20</sup> Aiken, 1999 <sup>‡23</sup> Tourangeau, 2002 <sup>24</sup>
<b>2. In-patient Mortality</b>	Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>†19,20</sup> Needleman, 2001 <sup>†19,20</sup> Robertson, 1999 <sup>25</sup> Robertson, 1999 <sup>25</sup> Robertson, 1999 <sup>25</sup> Silber, 1995 <sup>21</sup> Bradbury, 1994 <sup>26</sup> Bradbury, 1994 <sup>26</sup> Shortell, 1988 <sup>27</sup>	Aiken, 2000 <sup>28</sup> Bond, 1999 <sup>29</sup> Bond, 1999 <sup>29</sup>		(Silber, 1995) <sup>21</sup>	(Blegen, 1998A) <sup>30</sup> (Blegen, 1998A) <sup>30</sup> Blegen, 1998A <sup>30</sup> Bradbury, 1994 <sup>26</sup> Manheim, 1992 <sup>31</sup>	Mark, 2004 <sup>32</sup> Aiken, 2002 <sup>‡,∞22</sup> Aiken, 2000 <sup>28</sup> Manheim, 1992 <sup>31</sup> Krakauer, 1992 <sup>33</sup> Krakauer, 1992 <sup>33</sup> Hartz, 1989 <sup>34</sup> Hartz, 1989 <sup>34</sup> Hartz, 1989 <sup>34</sup>
<b>3. Pneumonia</b>	Cho, 2003 <sup>35</sup> Unruh, 2003 <sup>36</sup> Unruh, 2003 <sup>36</sup> Kovner, 2002 <sup>37</sup> ANA, 2000 <sup>‡17</sup> ANA, 2000 <sup>‡17</sup> Kovner, 1998 <sup>38</sup>	Kovner, 2002 <sup>37</sup> Kovner, 1998 <sup>38</sup>		Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup>		Mark, 2004 <sup>32</sup> Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>†19,20</sup> Needleman, 2001 <sup>†19,20</sup> ANA, 2000 <sup>‡17</sup> ANA, 2000 <sup>‡17</sup> Kovner, 1998 <sup>38</sup>
<b>4. Urinary Tract Infections</b>	Unruh, 2003 <sup>36</sup> Unruh, 2003 <sup>36</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Kovner, 2002 <sup>37</sup> (Kovner, 2002) <sup>37</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> ANA, 2000 <sup>17</sup>	Needleman, 2001 <sup>†19,20</sup> Kovner, 1998 <sup>38</sup>		Sovie, 2000 <sup>39</sup> Needleman, 2001 <sup>†19,20</sup> Kovner, 1998 <sup>38</sup>		Mark, 2004 <sup>32</sup> Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>*19,20</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup>
<b>5. Pressure Ulcers</b>	Donaldson, 2005 <sup>40</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Whitman, 2002 <sup>41</sup> Needleman, 2001 <sup>19,20</sup> Needleman, 2001 <sup>19,20</sup> Needleman, 2001 <sup>19,20</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> (Blegen, 1998A) <sup>30</sup>	(Cho, 2003) <sup>35</sup>		Unruh, 2003 <sup>36</sup> Unruh, 2003 <sup>36</sup> Sovie, 2000 <sup>39</sup>	(Blegen, 1998A) <sup>30</sup>	Mark, 2004 <sup>32</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> ANA, 2000 <sup>17</sup> Blegen, 1998A <sup>30</sup>

**Note:**

Findings in parentheses indicate worse outcomes with better nurse staffing.

Findings in bold are from the 12 key studies.

NS, not statistically significant at the .05 level;

ANA, American Nurses Association.

\*Medical patients.

†Surgical patients.

‡AIDS patients.

‡New York hospitals.

§California hospitals.

∞ Pennsylvania hospitals.

**Table 2 Clinical and Statistical Significance of Findings from Studies on the Effects of Nurse Staffing on Patient Outcomes (Continued) (adapted from Lang et al. 2004<sup>10</sup>, pp. 330-331)**

Outcome	Effect Size Judged to Be Unimportant		Importance of Effect Size Uncertain		Effect Size Judged to Be Important	
	NS	P<0.05	NS	P<0.05	NS	P<0.05
<b>6. Falls</b>	Donaldson, 2005 <sup>40</sup> Duntun, 2004 <sup>†42</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Arbesman, 1999 <sup>43</sup> Taunton, 1994 <sup>44</sup> Ceria, 1992 <sup>45</sup> Blegen, 1989A <sup>30</sup> Blegen, 1989A <sup>30</sup> (Blegen, 1989A) <sup>30</sup> Blegen, 1989B <sup>46</sup> Wan, 1987 <sup>47</sup> Wan, 1987 <sup>47</sup> Kustaborder, 1983 <sup>48</sup> Kustaborder, 1983 <sup>48</sup>			Krauss, 2005 <sup>49</sup> Duntun, 2004 <sup>*42</sup> Unruh, 2003 <sup>36</sup> (Unruh, 2003) <sup>36</sup> Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup>		Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> Krauss, 2005 <sup>49</sup> (Grillo-Peck, 1995) <sup>50</sup> Blegen, 1989B <sup>46</sup>
<b>7. Nosocomial Infections</b>	Unruh, 2003 <sup>36</sup> Unruh, 2003 <sup>36</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Whitman, 2002 <sup>41</sup> ANA, 2000 <sup>§17</sup> † (Blegen, 1998A) <sup>30</sup> Blegen, 1998A <sup>30</sup> (Grillo-Peck, 1995) <sup>50</sup> Shukla, 1983 <sup>51</sup>	Taunton, 1994 <sup>44</sup>				ANA, 2000 <sup>§17</sup> ANA, 2000 <sup>§17</sup> Haley, 1982 <sup>52</sup>
<b>8. Treatment Errors</b>	Blegen, 1998B <sup>46</sup> (Blegen, 1998A) <sup>30</sup> (Blegen, 1998B) <sup>46</sup> Grillo-Peck, 1995 <sup>50</sup> Grillo-Peck, 1995 <sup>50</sup> Taunton, 1994 <sup>44</sup> Taunton, 1994 <sup>44</sup> Wan, 1987 <sup>47</sup> Wan, 1987 <sup>47</sup> Wan, 1987 <sup>47</sup> Wan, 1987 <sup>47</sup>	Blegen, 1998B <sup>46</sup> (Blegen, 1998A) <sup>30</sup> (Blegen, 1998B) <sup>46</sup> (Blegen, 1998B) <sup>46</sup>		Blegen, 1998A <sup>30</sup>		(Blegen, 1998B) <sup>46</sup>
<b>9. Patient Satisfaction</b>	Blegen, 1998A <sup>30</sup> (Blegen, 1998A) <sup>30</sup> Bostrom, 1993 <sup>53</sup> Shukla, 1983 <sup>51</sup> Shukla, 1983 <sup>51</sup> Shukla, 1983 <sup>51</sup> Hinshaw, 1981 <sup>54</sup> Hinshaw, 1981 <sup>54</sup>	Sovie, 2000 <sup>39</sup> Sovie, 2000 <sup>39</sup> Hinshaw, 1981 <sup>54</sup> Hinshaw, 1981 <sup>54</sup> Hinshaw, 1981 <sup>54</sup>		Seago, 2006 <sup>55</sup>		(Shukla, 1983) <sup>51</sup>
<b>10. Unspecified Complications</b>	Kovner, 1998 <sup>38</sup> Flood, 1988 <sup>56</sup>	(Silber, 1995) <sup>21</sup>			Behner, 1990 <sup>57</sup> Flood, 1988 <sup>56</sup>	Behner, 1990 <sup>57</sup>
<b>11. Venous Thrombosis</b>	Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>†19,20</sup> Needleman, 2001 <sup>†19,20</sup> Kovner, 1998 <sup>38</sup> Kovner, 2002 <sup>37</sup> (Kovner, 2002) <sup>37</sup>			Kovner, 1998 <sup>38</sup> Kovner, 1998 <sup>38</sup>		

*Note:* Findings in parentheses indicate worse outcomes with better nurse staffing.

Findings in bold are from the 12 key studies.

NS, not statistically significant at the .05 level;

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§California hospitals.

∞Pennsylvania hospitals.

**Table 2 Clinical and Statistical Significance of Findings from Studies on the Effects of Nurse Staffing on Patient Outcomes (Continued) (adapted from Lang et al. 2004<sup>10</sup>, pp. 330-331)**

Outcome	Effect Size Judged to Be Unimportant		Importance of Effect Size Uncertain		Effect Size Judged to Be Important	
	NS	P<0.05	NS	P<0.05	NS	P<0.05
<b>12. Pulmonary Compromise</b>	Unruh, 2003 <sup>36</sup> Kovner, 2002 <sup>37</sup> Kovner, 2002 <sup>37</sup> Needleman, 2001 <sup>19,20</sup> Needleman, 2001 <sup>19,20</sup>	Unruh, 2003 <sup>36</sup> Kovner, 1998 <sup>38</sup>				
<b>13. Gastrohemorrhage</b>	Needleman, 2001 <sup>†19,20</sup> Needleman, 2001 <sup>†19,20</sup> Kovner, 1998 <sup>38</sup>	Needleman, 2001 <sup>*19,20</sup>				Needleman, 2001 <sup>*19,20</sup>
<b>14. Shock</b>	Needleman, 2001 <sup>†19,20</sup> Needleman, 2001 <sup>†19,20</sup>					Needleman, 2001 <sup>*19,20</sup> Needleman, 2001 <sup>*19,20</sup>
<b>15. Morbidity</b>	Bradbury, 1994 <sup>26</sup> Bradbury, 1994 <sup>26</sup>		Bradbury, 1994 <sup>26</sup>			
<b>16. Adverse Drug Events</b>	Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup> Cho, 2003 <sup>35</sup>					
<b>17. Intravenous Errors</b>	Wan, 1987 <sup>47</sup> Wan, 1987 <sup>47</sup>					
<b>18. Cardiac Arrests</b>	Kovner, 1998 <sup>38</sup> Blegen, 1998B <sup>46</sup> Blegen, 1998B <sup>46</sup>					
<b>19. Patient Injuries</b>	(Wan, 1987) <sup>47</sup> (Wan, 1987) <sup>47</sup>					

**Note:**

Findings in parentheses indicate worse outcomes with better nurse staffing.

Findings in bold are from the 12 key studies.

NS, not statistically significant at the .05 level;

ANA, American Nurses Association.

\*Medical patients.

†Surgical patients.

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‡New York hospitals.

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∞Pennsylvania hospitals.

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## **APPENDICES**

- American Nurses' Association Principles for Nurse Staffing
- American Nurses' Association Utilization Guide for the Principles for Nurse Staffing
- AONE Conference Brochure
- Ernst & Young Report
- JCAHO Conference Brochure
- Nurse Staffing and Patient Outcomes: Examining the Evidence in Acute Care and Nursing Homes
- Patient Safety Task Force
- The Perfect Storm
- Senate Concurrent Resolution 76, S.D. 1

# American Nurses' Association Principles For Nurse Staffing

## INTRODUCTION

Adequate nurse staffing is critical to the delivery of quality patient care.<sup>1</sup> Identifying and maintaining the appropriate number and mix of nursing staff is a problem experienced by nurses at every level in all settings. Regardless of organizational mission, tempering the realities of cost containment and cyclical nursing shortages with the priority of safe, quality care has been difficult, in part, because of the paucity of empirical data to guide decision-making. Since 1994, the recognition of this critical need for such empirical data has driven many American Nurses Association (ANA) activities including identification of nursing-sensitive indicators, establishment of data collection projects using these indicators within the State Nurses Associations (SNAs) and the provision of ongoing lobbying at federal and state levels for inclusion of these data elements within state and national data collection activities. In 1996, the Institute of Medicine produced its report *The Adequacy of Nurse Staffing in Hospitals and Nursing Homes* (Wunderlich, et al./1996) in which it too recognized the need for such data. Despite these efforts, heightened and more immediate attention to issues related to the adequacy of nurse staffing is needed to assure the provision of safe, quality nursing care.

<sup>1</sup> "...the recipients of nursing care are individuals, groups, families, or communities...the individual recipient of nursing care can be referred to as patient, client, or person. ... The term 'patient' is used throughout to provide consistency and brevity..." (ANA/. [Nursing's Social Policy Statement](#)).

## POLICY STATEMENTS

- Nurse staffing patterns and the level of care provided should not depend on the type of payor.
- Evaluation of any staffing system should include quality of worklife outcomes as well as patient outcomes.
- Staffing should be based on achieving quality of patient care indices, meeting organizational outcomes and ensuring that the quality of the nurse's worklife is appropriate.

## PRINCIPLES

The nine principles identified by the expert panel for nurse staffing and adopted by the ANA Board of Directors on November 24, 1998 are listed below. A discussion of each of the three categories follows the list.

### I. Patient Care Unit Related

- a. Appropriate staffing levels for a patient care unit reflect analysis of individual and aggregate patient needs.
- b. There is a critical need to either retire or seriously question the usefulness of the concept of nursing hours per patient day (HPPD).

- c. Unit functions necessary to support delivery of quality patient care must also be considered in determining staffing levels.

## II. **Staff Related**

- a. The specific needs of various patient populations should determine the appropriate clinical competencies required of the nurse practicing in that area.
- b. Registered nurses must have nursing management support and representation at both the operational level and the executive level.
- c. Clinical support from experienced RNs should be readily available to those RNs with less proficiency.

## III. **Institution/Organization Related**

- a. Organizational policy should reflect an organizational climate that values registered nurses and other employees as strategic assets and exhibit a true commitment to filling budgeted positions in a timely manner.
- b. All institutions should have documented competencies for nursing staff, including agency or supplemental and traveling RNs, for those activities that they have been authorized to perform.
- c. Organizational policies should recognize the myriad needs of both patients and nursing staff.

## I. Patient Care Unit Related

There is a critical need to either retire or seriously question the usefulness of the concept of nursing HPPD. It is becoming increasingly clear that when determining nursing hours of care one size (or formula) does not fit all. In fact, staffing is most appropriate and meaningful when it is predicated on a measure of unit intensity that takes into consideration the aggregate population of patients and the associated roles and responsibilities of nursing staff. Such a unit of measure must be operationalized to take into consideration the totality of the patients for whom care is being provided. It must not be predicated on a simple quantification of the needs of the "average" patients but must also include the "outliers." The following critical factors must be considered in the determination of appropriate staffing (see Table I):

- Number of patients;
- Levels of intensity of the patients for whom care is being provided;
- Contextual issues including architecture and geography of the environment and available technology; and,
- Level of preparation and experience of those providing care.

Appropriate staffing levels for a patient care unit reflect analysis of individual and aggregate patient needs. The following specific patient physical and psychosocial considerations should be taken into account:

- age and functional ability
- communication skills
- cultural and linguistic diversities
- severity and urgency of admitting condition

- scheduled procedure(s)
- ability to meet health care requisites
- availability of social supports
- other specific needs identified by the patient and by the registered nurse

Unit functions necessary to support delivery of quality patient care must also be considered in determining staffing levels:

- unit governance
- involvement in quality measurement activities
- development of critical pathways
- evaluation of practice outcomes

<b>TABLE I</b>	
<b>Matrix for Staffing Decision-Making</b>	
<b>Items</b>	<b>Elements/Definitions</b>
Patients	Patient characteristics and number of patients for whom care is being provided
Intensity of unit and care	Individual patient intensity; across the unit intensity (taking into account the heterogeneity of settings); variability of care; admissions, discharges and transfers; volume
Context	Architecture (geographic dispersion of patients, size and layout of individual patient rooms, arrangement of entire patient care unit(s), and so forth); technology (beepers, cellular phones, computers); same unit or cluster of patients
Expertise	Learning curve for individuals and groups of nurses; staff consistency, continuity and cohesion; cross-training; control of practice; involvement in quality improvement activities; professional expectations; preparation and experience

## II. Staff Related

The specific needs of various patient populations should determine the clinical competencies required of the nurse practicing. Role responsibilities and competencies of each nursing staff member should be well articulated, well defined and documented at the operational level (Aiken/1994). Registered nurses must have nursing management support and representation (first-line manager) at both the operational level and the executive level (nurse executive) (Aiken/1994). Clinical support from experienced RNs should be readily available to those RNs with less proficiency (McHugh et al./1996). The following nurse characteristics should be taken into account when determining staffing:

- experience with the population being served
- level of experience (novice to expert)
- education and preparation, including certification
- language capabilities
- tenure on the unit
- level of control of practice environment
- degree of involvement in quality initiatives
- measure of immersion in activities such as nursing research which add to the body of nursing knowledge
- measure of involvement in inter-disciplinary and collaborative activities regarding patient needs in which the nurse takes part
- the number and competencies of clinical and non-clinical support staff the RN must collaborate with and supervise

### III. Institution/Organization Related

Organizational policy should reflect an organizational climate that values registered nurses and other employees as strategic assets and exhibit a true commitment to filling budgeted positions in a timely manner. In addition, personnel policies should reflect the agency's concern for employees' needs and interests (McClure, et al./1983).

All institutions should have documented competencies for nursing staff, including agency or supplemental and traveling RNs, for those activities that they have been authorized to perform (JCAHO/1998). When floating between units occurs, there should be a systematic plan in place for cross-training of staff to ensure competency (JCAHO/1998). Adequate preparation, resources and information should be provided for those involved at all levels of decision-making. Opportunities must be provided for individuals to be involved to the maximum amount possible in making the decisions that affect them. (Williams and Howe/1994). Finally, any use of disincentives for reporting near misses and errors should be eliminated to foster continuous quality improvement (Leape/1994).

In addition, the organizational policies should recognize the myriad needs of both patients and nursing staff and provide the following:

- effective and efficient support services (transport, clerical, housekeeping, laboratory, and so forth) to reduce time away from patient care and to reduce the need for the RN to engage in "re-work" (Prescott et al./1991);
- access to timely, accurate, relevant information provided by communication technology that links clinical, administrative and outcome data;
- sufficient orientation and preparation including nurse preceptors and nurse experts to ensure RN competency;
- preparation specific to technology used in providing patient care;
- necessary time to collaborate with and supervise other staff;
- support in ethical decision-making;
- sufficient opportunity for care coordination and arranging for continuity of care and patient and/or family education;
- adequate time for coordination and supervision of UAP by RNs;

- processes to facilitate transitions during work redesign, mergers and other major changes in work life (Bridges/1991);
- the right for staff to report unsafe conditions or inappropriate staffing without personal consequence; and,
- a logical method for determining staffing levels and skill mix.

## EVALUATION

Adequate numbers of staff are necessary to reach a minimum level of quality patient care services. Ongoing evaluation and bench marking related to staffing are necessary elements in the provision of quality care. At a minimum, this should include collection and analysis of nursing-sensitive indicators (ANA/1997) and their correlation with other patient care trends. It has been shown that the quality of work life has an impact on the quality of care delivered. Therefore, on an ongoing basis, the following trends should be evaluated:

- work-related staff illness and injury rates (Shogren and Calkins/1995)
- turnover/vacancy rates
- overtime rates
- rate of use of supplemental staffing
- flexibility of human resource policies and benefit packages
- evidence of compliance with applicable federal, state and local regulations
- levels of nurse staff satisfaction

Staffing should be such that the quality of patient care is maintained, the quality of organizational outcomes are met and that the quality of nurses' worklife is acceptable. **Changes in staffing levels, including changes in the overall number and/or mix of nursing staff, should be based on analysis of standardized, nursing-sensitive indicators. The effect of these changes should be evaluated using the same criteria.** Caution must be exercised in the interpretation of data related to staffing levels and patterns and patient outcomes in the absence of consistent and meaningful definitions of the variables for which data are being gathered.

## RECOMMENDATIONS

Shifting the nursing paradigm away from an industrial model to a professional model would move the industry and organizations away from the technical approach of measuring time and motion to one that examines myriad aspects of using knowledge workers to provide quality care. This shift would spell the end to the "nurse-is-a-nurse-is-a-nurse" mentality by focusing on the complexity of unit activities and level(s) of nurse competency needed to provide quality patient care. To facilitate this shift, the ANA makes the following recommendations:

- A distinct standardized definition of unit intensity must be developed. Factors to be taken into consideration in the development of such a definition include
  - Number of patients within the unit;
  - Levels of intensity of all of the patients for whom care is being provided;

- Contextual issues including architecture and geography of the environment and available technology;
  - Level of preparation and experience (i.e., competency) of those providing care.
- Data should be gathered to address the relationship between staffing and patient outcomes including but not limited to
    - Improvement in health status;
    - Achievement of appropriate self-care;
    - Demonstration of health-promoting behaviors;
    - Patient length of stay or visit;
    - Health-related quality of life;
    - Patient perception of being well cared for; and
    - Symptom management based on guidelines (Mitchell, et al./1997).

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# UTILIZATION GUIDE

*for the ANA*

**PRINCIPLES**

*for  
Nurse  
Staffing*

  
**ANA**  
AMERICAN NURSES  
ASSOCIATION

# UTILIZATION GUIDE

*for the ANA*

## PRINCIPLES

# *for Nurse Staffing*

The science of measuring patient needs and nursing work has evolved since the earliest recorded efforts by the New York Academy of Medicine in 1922. In an effort to quantify nursing need in a post-war shortage, superintendents from ten training schools for nurses participated in a “time study of the bedside nursing required by the average type of case in the surgical, medical and pediatric services of an acute hospital.” The findings: the average nursing care requirement among these patients was five hours and four minutes in a 24-hour period, or approximately five nursing hours per patient day. The author reports that, at that time, none of the hospitals in the city of New York had sufficient nurse staffing to meet that need. From this observation, the author surmised that “a statement can be made that the bed capacity alone does not indicate the availability of hospital facilities. Hospitals with a nursing standard falling so much below the requirements for adequate nursing as many of them do, should not consider themselves able to run at full capacity.” (Lewinski-Corwin, 606).



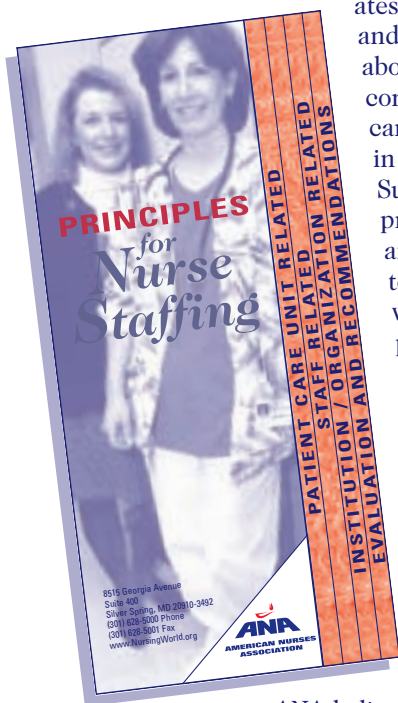
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# FOREWORD

Since the 1999 publication of ANA's *Principles for Nurse Staffing* (the *Principles*, Appendix A), staffing issues facing the profession have grown more complex as a result of a variety of issues, including the perceived shortage of registered nurses. Other factors, such as fewer nursing school graduates, aging populations of patients and nurses, increasing concerns about health care spending, and competing priorities for health care dollars, place the profession in a potentially perilous situation.

Such pressures on nursing to provide nursing care to sicker and older patients cause nurses to seek the definitive answer for what is the right number of patients per RN within care units; what is the perfect staffing system; and who has found the answers. However, there are no perfect answers to these questions. Recent research has addressed these questions and is starting to provide some insights (Cho, et al. 2003, Needleman, et al., 2001, ANA, 2000, etc.).



ANA believes that the level where care is given is where these questions need to be addressed. The *Principles* are a framework to help nurses and administrators address questions about appropriate staffing, provide measurable criteria to assess the sufficiency of staffing and the criteria for reviewing staffing systems to ensure they are comprehensive in their framework. This utilization guide provides concrete information for applying the ANA *Principles for Nurse Staffing* in assessing the adequacy of nurse staffing on units.

# INTRODUCTION

The ANA *Principles for Nurse Staffing* were developed to focus the health care industry on how complex nurse staffing decisions are and to identify the major elements to consider when evaluating the safety and appropriateness of nurse staffing. The principles also can serve as a guide to making nurse staffing decisions. The need for such principles was evident when, shortly after they were published, the *Principles* were incorporated into legislative and collective bargaining contract language. While the *Principles* were never meant to identify appropriate staffing levels for nursing units, they were meant to guide users in identifying or developing better tools and processes to improve nurse staffing.

Registered nursing is a “knowledge-based” practice. Although registered nurses perform tasks such as bed making, catheter insertion, and medication administration, the knowledge they have obtained through their educational programs and work experiences guides the decision making needed to provide the full scope of nursing care to the appropriate patient at the appropriate time in the appropriate setting. Sufficient staffing allows the registered nurse the freedom to apply that knowledge efficiently and effectively, and is therefore critical.

The ANA Congress on Nursing Practice and Economics (CNPE) has developed this guide for nurses in all positions and across all settings. It also may be useful to nurse entrepreneurs in the business of developing staffing systems for health care facilities and health care consultants, but its primary focus remains nurses who make staffing decisions.

# DEVELOPMENT OF THE PRINCIPLES *for Nurse Staffing*


In 1997, ANA convened a panel of nurse experts and health services researchers with expertise in nurse staffing or nursing administration to help ANA develop an understanding of factors contributing to nurses' workloads and the adequacy of staffing decisions. The process included the following steps:

- A review and synopsis of all staffing and outcomes research conducted following the 1996 Institute of Medicine report *Nurse Staffing in Hospitals and Nursing Homes: Is it Adequate?*
- A synopsis of federal (Medicare Conditions of Participation) and state regulations related to nurse staffing requirements.
- A compilation of staffing standards set by specialty nursing organizations.

Following the completion of the above reviews, the panel met to begin its work.

The panel's discussion included, among other topics:

- Feasibility of identifying minimum safe staffing levels
- Levels and variability of patient acuity
- Individual nurse factors such as experience and expertise
- Organizational resources and support available to the patient care unit
- Issues related to the work environment.



The panel believed that determining minimum staffing levels was neither feasible nor appropriate beyond the level at which nurses provide patient care. They also believed that establishing minimum staffing levels, even when done at the appropriate level, should be the last of all options. This statement was based on their belief that the complexity and variability of patient needs is so great that static minimums would be meaningless and possibly harmful.

Since the panel thought that establishing minimum staffing levels could not be done safely, it developed a framework for evaluating the adequacy of nurse staffing. The panel identified the principles for nurse staffing, as well as criteria for determining the staffing needs for a care setting. The information is organized into four categories:

- The patient care unit (patient-specific and unit-specific factors)
- The nursing staff (experience and expertise)
- The organization (policies and practices)
- Evaluation (of the sufficiency of staffing).

With information organized into these categories, nursing staff, administrators, other health professionals, consumers and policy makers can better appreciate all the factors that must be considered in making safe staffing decisions. Identifying the complexity of nurse staffing decisions should highlight the dangers of the budget-balancing approach of laying off experienced RNs. This identification also serves policy and law makers, administrators and nurses by encouraging a new and holistic look at internal and external policies and decisions affecting patients' and nurses' well-being.

# ANA PRINCIPLES for Nurse Staffing

Three underlying assumptions of these principles provide guidance for staffing decisions:

- Nurse staffing patterns and the level of care provided should not be based on the type of payer.
- Evaluation of any staffing system should include quality of nurses' work life outcomes as well as patients' outcomes.
- Staffing should be based on achieving quality of patient care indices, meeting organizational outcomes, and ensuring that the quality of nurses' work life is appropriate.

These assumptions state the major ethical concerns guiding ANA's conceptualization of the forces that drive nurse staffing decisions. First and foremost is the concern for the patient and the type of care the patient receives. Second is the concern for the well being of the nurse, which directly and indirectly affects patient care. As is required of registered nurses in all of the profession's foundational documents [*The Code of Ethics for Nurses with Interpretive Statements* (2000), *Nursing's Social Policy Statement, 2nd Ed* 2003) and *Nursing: Scope and Standards of Practice* (2004)], patient safety and well being is the critical factor that guides all decision making.

Beyond these assumptions, there are specific principles and important criteria relating to patients and the care unit, the nursing staff, and the organization (see Appendix A). These principles and criteria will be discussed in the rest of this document.



# USING THE PRINCIPLES

Making nurse staffing decisions is a complex process requiring input from all levels within the nursing structure. Critical to this process are any patient classification and acuity systems currently being used. Since a number of each of these systems are in use, it is necessary to find out from the system's vendor which of the criteria found in the *Principles* are included in the system they offer. Knowing that, data on criteria not included in the systems can then be collected.

## Determining patient classification and measuring nursing workload

In the more than 80 years since the original studies on nurse staffing, the science of measuring patient need and translating that information into staffing requirements has made significant advances. Nevertheless, it still lacks the specificity and reliability needed in 21st-century health care.

Giovannetti defines patient classification as the “categorization of patients according to some assessment of their nursing care requirements over a period of time” and the function of patient classification systems as “the identification and classification of patients into care groups or categories, and the quantification of these categories as a measure of the nursing effort required” (Giovannetti, 1979). These two concepts are critical to the staffing process.

Abdellah and Levine distinguish two major types of patient classification systems: “prototype evaluation” and “factor evaluation” (1965). Using prototype evaluation, the nurse reads among scenarios of sample patients and their care needs, and then selects one that most closely matches the patient being assessed. The patient is then assigned the associated acuity level or category number. The advantage of this system is that it simplifies the process and the time required for assessment. However, because of the subjective nature of this approach, a great deal of variability among nurse assessments of a single patient may occur. Thus, the reliability of the system is uncertain and the accuracy of the assessments questionable.

When evaluating factors, the rater selects from a menu of the care requirements and interventions that apply to the patient being assessed, or the system identifies the interventions from documentation in the electronic patient record. Each of the requirements has its own associated (but invisible) value regarding time required to deliver that care. When totaled, the patient's acuity level/category and the hours of nursing care required are both determined. That information is then added to the data on other patients (aggregated), and the number of staff required for the unit is calculated. However, not all tools have the capacity to distinguish among the hours of care needed and identify the appropriate mix of staff (RN, LPN/LVN, unlicensed personnel) needed. Professional nursing judgment is needed in all of these systems to ensure that the output meets the actual clinical needs of the nursing unit.

VanSlyck (1991) adds to the categories of patient classification systems. Systems having values associated with interventions that only account for the time required to accomplish them are known as timed-task systems. Timed-task systems are based on industrial models and provide only a portion of the staffing requirements: the overall hours of staff time needed. Timed-task systems are uni-dimensional and thus are unable to determine hours of care according to skill level. It is then the professional judgment of a registered nurse that must decide how the staff is apportioned among RNs, LPNs and assistive personnel.

Assessment and intervention systems, on the other hand, can project staffing needs in terms of both number and skill mix. The difference is that, rather than simply associating time with activities, these systems have been developed to also interpret the skill level required for various patient care activities. In reality, the nursing care process has been embedded in each intervention. As a result, once the appropriate information has been entered and calculated, staffing for the next shift would be suggested both in number and mix.

Although originally focused on a better way to capture patient needs in making staffing decisions, classification systems have other benefits. These benefits, through daily documentation and collection of patient care needs, can provide patient data and staffing information, which helps to identify trends and project staffing and budget needs for subsequent years.

## The role of professional judgment

As stated earlier, a patient classification or acuity system is only one part of a staffing system. Professional judgment is critical in evaluating the results of a classification or acuity system in light of the registered nurses' knowledge of the nursing needs of the patients on any unit. Blindly accepting an automated system's output without a knowledgeable person's critical review is inviting trouble.

Consider the following two examples. Mrs. R., 75 years old, is two days post-operative following a cholecystectomy. All of her vital signs are stable. She is walking with minimal assistance, eating a soft diet; and bathing with no assistance. Her family visits daily. Mrs. R. could be cared for by unlicensed assistive personnel. She is very stable and recovering quickly from her surgery. Family is present and provides support. The RN will provide oversight of the assistive personnel's care but is not the care provider.

Mr. J. is a 75-year-old with moderate emphysema and cardiac insufficiency who is hospitalized with congestive heart failure. He is on a cardiac monitor, IV medications, a central venous catheter, a foley catheter, oxygen cannula, strict intake and output measurement, skin breakdown prevention measures, vital signs every 30 minutes and respiratory treatments to prevent pneumonia and pneumothorax. Mr. J. has no family or friends who stay with him. This patient is critically ill and requires a high level of care by an expert registered nurse.

These examples profile two patients with potentially high levels of acuity but totally different nursing care needs. Such differences require the assessment of classification and acuity system output by registered nurses with knowledge of the patients being included in the staffing system.

In the decision about which registered nurses, licensed practical nurses and other assistive personnel are assigned to a particular unit, the classification systems do not take into account such things as who works best with dying patients and their families, who works best with respiratory patients, who has the skills to manage a patient's complex needs and who handles a frightened patient best. These are very subjective characteristics of the nursing care providers involved in this staffing system. If care is to be appropriate for the patient and the work

fulfilling for the care provider, such subjective characteristics must be taken into account when staffing. Using such information in staffing decisions requires the knowledge and understanding of an experienced registered nurse.

As can be seen in the *Principles*, there are a number of variables relating to the patient, nurse and organization that will affect staffing decisions. For example, if there are patients on a unit who are receiving blood products throughout the night, who will go to the blood bank? Does the hospital have a “transport” or “runner” service to meet such needs? If someone from the nursing unit must go pick up the blood in the blood bank, who will do that? How will that need for a member of the nursing staff to be out of the unit for a period of time affect the care of the unit’s patients? Such issues are real and often multiply in many care settings. For example, if a home health nurse has a patient who requires complex care, how do that patient’s needs affect the nurse’s other patients or other nurses’ workload assignments? How will they affect staffing decisions?

In another example, the classification tool projects a need for five registered nurses in coronary care, and one of the five nurses is a new graduate, another is working a double shift and a third is being assigned from Labor & Delivery. What staffing decisions should be made to ensure proper nurse staffing on this coronary care unit? Perhaps additional or more experienced RNs might be required to complete the staff complement for that unit on that shift. This is possibly the most important step in the staffing process, but it is not factored into classification tools and includes considerations that are only recently being considered. The considerations are unique to facilities, shifts, seasons and other factors, and are absolutely critical in making staffing adjustments that increase the ability of the nursing staff to deliver safe, quality care to their patients.

It becomes obvious how much subjective input is needed in making staffing decisions when you review the principles contained in the *Principles for Nurse Staffing*. The clinically skilled and knowledgeable registered nurse familiar with the patients and nursing staff must review the output of staffing systems if staffing decisions are to be made in the best interest of patients and care providers.

## Decision-making resources

A range of resource materials should be made available to support registered nurses involved in the staffing process. Keeping this information ready can clarify and expedite the decision-making process and help to answer a range of questions, as well as support decision-making. Some useful resources are:

- *Current Nursing: Scope and Standards of Nursing* (ANA)
- Appropriate scopes and standards of specialty nursing practice
- Current State Nurse Practice Act and Scope of Practice information (State Board of Nursing)
- Current *Code of Ethics with Interpretive Statements* (ANA)
- Copies of relevant facility policies and procedures (staffing, floating, agency use, etc.)
- Copies of the current collective bargaining agreement/contract (if applicable)
- Copies of contracts with outside staffing agencies
- Information on competencies of agency staff
- *The Bill of Rights for Registered Nurses* (ANA)
- *Principles for Delegation*.

## Patient Acuity Systems: Purchasing Decisions

The principles in the *Standards* can serve as a guide to assessing the comprehensiveness of any system under consideration. Direct care nursing staffs should participate in the evaluation process or at least provide structured and focused input to decision-makers on purchases of systems affecting staffing decisions.

Including staff from all departments that provide or use data resulting from such systems will help decision-makers better understand the changing nature of care delivery and help increase their sensitivity to the effect such systems may have on the staff.

At the same time the systems are assessed, staffing-related policies and procedures should be reviewed and evaluated. These may be found in an organization's policies and procedures manual, collective bargaining agreements, contracts with outside agencies or protocols developed at the unit level.

While the evaluation of a product is the job of the organization's management, that work can be made easier by providing them the *Principles* and staff input from those who will use the system. Working collaboratively on the process also can increase buy-in from staff and confidence in the product purchased. It is highly recommended that the organization's decision-makers and vendors receive a copy of the *ANA Principles for Nurse Staffing* before the vendor's visit so that they can incorporate information in their presentation about how their product addresses the principles.

In addition to the nursing staff — at all levels and across all units within the facility — others may benefit from being involved in the education and selection process and may provide valuable input because of the nature of their work. While each organization is unique, some suggestions for who should be included are:

- Information technology staff (Is the tool computerized? Will it work with the computer system and programs in place?)
- Finance department staff (Will the tool provide information that can be used to determine budget projections? Can the tool capture revenue generated as a result of nursing care?)
- Quality assurance/risk management staff (Will the tool help to project staffing that improves patient safety and outcomes, or help to identify at what point staffing levels affect patient safety and outcomes?)

When an organization has determined it will purchase a patient classification or acuity system, staff at various levels within the organization should meet with vendors to hear about the capabilities of their products and to provide information that will be important in the implementation process.

## Checklist of acuity systems

Questions that might provide important and relevant information about any system include some of the following:

1. What is your philosophy on nurse staffing?
2. Can you identify how your system addresses the *Principles* and captures the data necessary to include the criteria in your system?
3. How does your product help a facility meet the staffing effectiveness requirements of JCAHO?
4. Can you explain the role you see registered nurses playing in determining appropriate staffing?
5. What departments within a hospital should be involved in evaluating your product?
6. Where is the information used in determining patient acuity derived?
7. How is patient acuity determined?
8. How is skill mix determined?
9. How many client hospitals are currently using your staffing system?
10. What is the average length of time your client hospitals have used your product?
11. What do your clients find most beneficial about your system?
12. What do your clients find most difficult about your system?
13. What have clients who chose not to use your system seen as shortcomings?
14. What additional benefits result from using your staffing system?
15. How much training is involved in using your system?
16. Who provides the training to use your system, and who receives the training?
17. What does the training encompass?
18. What is the average start-up time for your system?
19. What software is and is not compatible with your system?
20. How reliable/valid is your system?
21. How do you measure for reliability and validity?
22. How often is this measurement completed?
23. What patient and nurse outcome data does your system collect to evaluate trends in staffing sufficiency?
24. Where is the information gathered during the classification process stored?

## Evaluating a system

It is critical to evaluate any system used to do staffing. The evaluation should include the assessment of whether the systems output (i.e., suggested staffing mix and levels) meets the needs of the patients and nurses on the nursing care unit. Recognizing that, evaluating the sufficiency of staffing may not reflect the accuracy of the instrument alone, but also may evaluate the effectiveness of the entire staffing process. Research in acute care provides evidence that when Magnet™ criteria are met;

*Research in acute care provides evidence that when Magnet™ criteria are met; including RN participation in decisions related to staffing, RNs have higher job satisfaction.*

including RN participation in decisions related to staffing, RNs have higher job satisfaction (Kramer & Schmalenberg, 1991; Aiken, Havens, & Sloan, 2000) and lower nurse burnout (Aiken, Sochalski, & Lake, 1997; Aiken, Havens, & Sloan 2000). In addition, there is some evidence that

such facilities experience improved patient outcomes, such as higher patient satisfaction (Aiken, Sloane, & Sochalski, 1998) and a lower mortality rate (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002).

Moreover, it is critical that the sufficiency of staffing is measured on an ongoing basis that, at a minimum, should include collection and analysis of nursing-sensitive structure, process and outcome indicators. ANA's 1997 foundational work on the identification of these elements has yielded a framework for establishing the linkages between nurse staffing and patient outcomes but also has provided policy groups and regulatory agencies with criteria to evaluate patient safety.

The indicators used or under development by ANA in the National Database for Nursing Quality Indicators (NDNQI, 2005) are listed below:

- Mix of RNs, LPNs and assistive personnel caring for patient
- Total nursing care hours provided per patient day (RNs, LPNs, assistive personnel)



- Contract agency staff
- Pressure ulcers
- Patient falls
- Patient falls with injury
- RN staff satisfaction
- Pediatric pain assessment cycle
- Pediatric peripheral intravenous infiltration
- Restraint use (psychiatry)
- Violent behavior (psychiatry)
- RN voluntary turnover
- Nursing musculoskeletal injuries.

These data are collected at the nursing unit level. More detailed information on the ANA nursing-sensitive quality indicators, their standardized definitions and NDNQI can be found at <http://www.nursingworld/NDNQI>.

In addition to evaluating the above data, the ANA *Principles for Nurse Staffing*, stating that the quality of work life has an impact on the quality of care delivered, recommends that trends in the following also should be monitored as a measure of sufficient staffing:

- Work-related staff illness and injury rates
- Overtime rates
- Flexibility of human resource policies and benefit packages
- Evidence of compliance with applicable federal, state and local regulations.

According to the *Principles*, the ultimate goal of staffing should be to ensure that “the quality of patient care is maintained, the quality of organizational outcomes is met and the quality of nurses’ work life is acceptable” (ANA, 2000). Changes in staffing should be based on analysis of standardized, routinely collected indicators that capture both patient care outcomes and nurse outcomes. Critical to this process is the standardized definitions and collection methods of all indicators.

## The importance of measuring reliability and validity

An additional consideration in the assessment process is evaluating the reliability of those persons who collect the data. Several factors support the need for these measurements:

- Frequent turnover in staff
- Human fallibility
- The changing environment
- The need to make projections for future staffing and budget requirements
- The need to meet external requirements for valid and reliable patient acuity systems.

What is reliability? Reliability means that the instruments and the individuals using them produce consistent and accurate results. Before implementing any new technology, including new patient classification instruments, the users of the technology — in this case RNs — need to be thoroughly trained in their use and then evaluated at specified intervals to be sure that they are following the collection definitions and methods accurately. In addition, inter-rater reliability, the measurement for accuracy between and among nursing staff collecting the data, is critical. Inter-rater reliability measurements check that all data collectors are obtaining the same results. ANA recommends that, at a minimum, inter-rater reliability be measured twice a year.

What is validity? We know the patient classification instrument is valid if it measures the scope of nursing care needs for patients in order to predict staffing required in order to deliver that care. Validity is not an all or none concept but can exist in degrees and can be measured from a range of perspectives. Three types of validity important to this discussion include:

- **Face validity** — a judgment as to whether or not the instrument in question appears to be measuring the desired concept (Brockopp and Tolsma, 190).
- **Content validity** — is a judgment regarding how well the instrument represents the characteristics to be assessed (Brockopp and Tolsma, 190).
- **Construct validity** — refers to the extent to which a participant actually possesses the characteristic under study (Brockopp and Tolsma, 190).

“The validity of an instrument (how well it measures what it is supposed to measure) is essential to the success of any research endeavor” (Brockopp and Tolsma, 191).

It is important to note that **any** change in a data collection instrument invalidates its validity. If changes in any instrument are needed, the organization should work with the instrument developer or statisticians to re-establish the instrument’s reliability and validity.

Staffing frustrations might make inflating information entered into a classification instrument seem like a good option to establish the need for more staff, however, to maximize the benefits of a classification tool, accuracy and consistency are the keys. If the instrument does not seem to be projecting the need for adequate or appropriate staffing, it is recommended that staff work with the organization’s administration at the unit level to collect data to demonstrate the system’s inadequacy. Then such data can be presented to the appropriate upper-level management responsible for staffing decisions and the staffing system.



## Frequently asked questions

### **Where can one go for expert advice on classification/acuity tools?**

The ANA *Principles for Nurse Staffing* provides a comprehensive perspective on the critical considerations for evaluating an existing or potential patient classification tool. However, finding or understanding how a particular instrument measures those considerations are measured and obtaining guidance in developing a more wide-ranging process requires expert support from the instrument's vendor.

### **How do you know if the system really works?**

Vendors should be willing to provide names of facilities and contacts who can talk with you directly about how the system has functioned in their facility. Use some of the questions developed for the vendor interview in your conversations with customers to compare responses. In some cases, visits can be arranged providing potential customers with opportunities to see systems up and running in other facilities, and to talk with staff about their experiences.

### **Who should be involved in data review, and what data should be evaluated?**

In addition to unit staff and managers, quality assurance/risk management staff can benefit from the review of patient and nurse-related data. ANA believes that the nursing-sensitive quality indicators (<http://www.nursingworld.org/NDNQI>) should be used in the evaluation process. In addition, other specific data recommendations have been listed in the Evaluation section of the *Principles* (<http://www.nursingworld.org/readroom/stffprnc.htm>).

### **How frequently should data be reviewed?**

At a minimum, data should be reviewed twice a year. If unacceptable or unanticipated trends in patient safety or nurse well-being become evident, more frequent review may be necessary. It is recommended that in times of rapid change in staff, administration, patient population or ownership data should be evaluated on a quarterly basis.

### **What do you do if expertise is needed to assist in data review?**

To ensure that all participants have a similar foundation in the review of data and are able to make some assessment of the value and meaning of the data collected, it is recommended

that some basic education on statistics and research methods be provided. In similar situations, ANA has developed curricula and jointly participated in this process in concert with a local (nurse) researcher who can be more routinely accessible over the course of time. If not available on staff, nursing or health services researchers at a nearby university or college could provide similar assistance.

### **Are there other options for data analysis?**

More than 800 hospitals currently participate in the National Database for Quality Indicators (NDNQI), a database for nursing-sensitive indicators, developed and maintained under a contract with ANA. NDNQI provides facilities with quarterly (unit-level) reports for their facility, as well as benchmarking data with similar facilities.

### **Where can facilities or nurses go for more assistance with patient classification systems?**

ANA cannot make recommendations about specific vendors. However, it can provide criteria for assessing and answers to general questions. Also, the reference section included in this guide includes articles that also may answer readers' questions.

If you have further questions about how to understand the ANA *Principles for Nurse Staffing*, or how to use them in assessing or developing a staffing process for your care environment, please contact the ANA Department of Nursing Practice and Policy for assistance. In addition, you can contact vendors to receive information on their individual systems. Health care consultants often can provide information.



# APPENDIX A

## PRINCIPLES

# *for Nurse Staffing*

### Introduction

Adequate nurse staffing is critical to the delivering of quality patient<sup>1</sup> care. Identifying and maintaining the appropriate number and mix of nursing staff is a problem experienced by nurses at every level in all settings. Regardless of organizational mission, tempering the realities of cost containment and cyclical nursing shortages with the priority of safe, quality care has been difficult, in part, because of the paucity of empirical data to guide decision-making. Since 1994, the recognition of this critical need for such empirical data has driven many American Nurses Association (ANA) activities, including identifying nursing-sensitive indicators, establishing of data collection projects using these indicators within the constituent member associations (CMAs) and providing ongoing lobbying at federal and state levels for inclusion of these data elements within state and national data collection activities. In 1996, the Institute of Medicine produced its report “The Adequacy of Nurse Staffing in Hospitals and Nursing Homes” (Wunderlich, et al., 1996) in which it, too, recognized the need for such data. Despite these efforts, heightened and more immediate attention to issues related to the adequacy of nurse staffing is needed to ensure the provision of safe, quality nursing care.

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<sup>1</sup> “...the recipients of nursing care are individuals, groups, families, or communities...the individual recipient of nursing care can be referred to as patient, client, or person. ...The term “patient” is used throughout to provide consistency and brevity...” (ANA, 1995. Nursing’s Social Policy Statement).

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

## Policy Statements

- Nurse staffing patterns and the level of care provided should not depend on the type of payer.
- Evaluation of any staffing system should include quality of work life outcomes as well as patient outcomes.
- Staffing should be based on achieving quality of patient care indices, meeting organizational outcomes and ensuring that the quality of the nurses' work life is appropriate.

## Principles

The nine principles identified by the expert panel for nurse staffing and adopted by the ANA Board of Directors on November 24, 1998, are listed below. A discussion of each of the three categories follows the list.

### *I. Patient Care Unit Related*

- a. Appropriate staffing levels for a patient care unit reflect analysis of individual and aggregate patient needs.
- b. There is a critical need either to retire or seriously question the usefulness of the concept of nursing hours per patient day (NHPPD).
- c. Unit functions necessary to support delivery of quality patient care also must be considered in determining staffing levels.

### *II. Staff Related*

- a. The specific needs of various patient populations should determine the appropriate clinical competencies required of the nurse practicing in that area.
- b. Registered nurses must have nursing management support and representation at both the operational and executive level.
- c. Clinical support from experienced RNs should be readily available to those RNs with less proficiency.

### III. Institution/Organization Related

- a. Organizational policy should reflect an organizational climate that values registered nurses and other employees as strategic assets and exhibits a true commitment to filling budgeted positions in a timely manner.
- b. All institutions should have documented competencies for nursing staff, including agency or supplemental and traveling RNs, for those activities that they have been authorized to perform.
- c. Organizational policies should recognize the myriad needs of both patients and nursing staff.

### I. Patient Care Unit Related

There is a critical need either to retire or seriously question the usefulness of the concept of nursing hours per patient day. It is becoming increasingly clear that when determining nursing hours of care, one size (or formula) does not fit all. In fact, staffing is most appropriate and meaningful when it is predicated on a measure of unit intensity that takes into consideration the aggregate population of patients and the associated roles and responsibilities of nursing staff. Such a unit of measure must be operationalized to take into consideration the totality of the patients for whom care is being provided. It must not be predicated on a simple quantification of the needs of the “average” patients but also must include the “outliers.” The following critical factors must be considered in the determination of appropriate staffing (see Table I):

- Number of patients
- Levels of intensity of the patients for whom care is being provided
- Contextual issues including architecture and geography of the environment and available technology
- Level of preparation and experience of those providing care.

Appropriate staffing levels for a patient care unit reflect analysis of individual and aggregate patient needs. The following specific patient physical and psychosocial considerations should be taken into account:

- Age and functional ability
- Communication skills



- Cultural and linguistic diversities
- Severity and urgency of admitting condition
- Scheduled procedures
- Ability to meet health care requisites
- Availability of social supports
- Other specific needs identified by the patient and by the registered nurse.

Unit functions necessary to support delivery of quality patient care must also be considered in determining staffing levels:

- Unit governance
- Involvement in quality measurement activities
- Development of critical pathways
- Evaluation of practice outcomes.

**Table 1**  
*Matrix for Staffing Decision-Making*

<i>Items</i>	<i>Elements/Definitions</i>
Patients	Patient characteristics and number of patients for whom care is being provided
Intensity of unit and care	Individual patient intensity; across-the-unit intensity (taking into account the heterogeneity of settings); variability of care; admissions, discharges and transfers; volume
Context	Architecture (geographic dispersion of patients, size and layout of individual patient rooms, arrangement of entire patient care units and so forth); technology (beepers, cellular phones, computers); same unit or cluster of patients
Expertise	Learning curve for individuals and groups of nurses; staff consistency, continuity and cohesion; cross-training; control of practice; involvement in quality improvement activities; professional expectations; preparation and experience

## II. Staff Related

The specific needs of various patient populations should determine the clinical competencies required of the practicing nurse. Role responsibilities and competencies of each nursing staff member should be well articulated, well defined and documented at the operational level (Aiken, 1994). Registered nurses must have nursing management support and representation (first-line manager) at both the operational level and the executive level (nurse executive) (Aiken, 1994). Clinical support from experienced RNs should be readily available to those RNs with less proficiency (McHugh et al., 1996). The following nurse characteristics should be taken into account when determining staffing:

- Experience with the population being served
- Level of experience (novice to expert)
- Education and preparation, including certification
- Language capabilities
- Tenure on the unit
- Level of control of practice environment
- Degree of involvement in quality initiatives
- Measure of immersion in activities, such as nursing research, that add to the body of nursing knowledge
- Measure of involvement in interdisciplinary and collaborative activities regarding patient needs in which the nurse takes part
- The number and competencies of clinical and non-clinical support staff the RN must collaborate with and supervise.

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Aiken, L.H., Smith, H.L. and Lake, E.T. (1994). "Lower Medicare mortality among a set of hospitals known for good nursing care." *Medical Care*. 32(8), 771-787.

McHugh, M., West, P., Assatly, C., Duprat, L., Howard, L., Niloff, J., Waldo, K., Wandel, J., Clifford, J. (April 1996). "Establishing an interdisciplinary patient care team." *Journal of Nursing Administration*. 26(4), 21-27.

### III. Institution/Organization Related

Organizational policy should reflect an organizational climate that values registered nurses and other employees as strategic assets and exhibits a true commitment to filling budgeted positions in a timely manner. In addition, personnel policies should reflect the agency's concern for employees' needs and interests (McClure, et al., 1983).

All institutions should have documented competencies for nursing staff, including agency or supplemental and traveling RNs, for those activities that they have been authorized to perform (JCAHO, 1998). When floating between units occurs, there should be a systematic plan in place for cross-training of staff to ensure competency (JCAHO, 1998). Adequate preparation, resources and information should be provided for those involved at all levels of decision-making. Opportunities must be provided for individuals to be involved to the maximum amount possible in making the decisions that affect them. (Williams and Howe, 1994). Finally, any use of disincentives for reporting near misses and errors should be eliminated to foster continuous quality improvement (Leape, 1994).

In addition, the organizational policies should recognize the myriad needs of both patients and nursing staff and provide the following:

- *Effective* and *efficient* support services (transport, clerical, housekeeping, laboratory and so forth) to reduce time away from patient care and the need for the RN to engage in “re-work” (Prescott et al., 1991)
- Access to timely, accurate, relevant information provided by communication technology that links clinical, administrative and outcomes data
- Sufficient orientation and preparation including nurse preceptors and nurse experts to ensure RN competency
- Preparation specific to technology used in providing patient care
- Necessary time to collaborate with and supervise other staff
- Support in ethical decision-making

- Sufficient opportunity for care coordination and arranging for continuity of care and patient or family education
- Adequate time for coordination and supervision of nursing assistive personnel by RNs
- Processes to facilitate transitions during work redesign, mergers and other major changes in work life (Bridges, 1991)
- The right for staff to report unsafe conditions or inappropriate staffing without personal consequence
- A logical method for determining staffing levels and skill mix.

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McClure, M.L., Poulin, M.A., Sovie, M.D. and Wandelt, M.A. (1983). *Magnet Hospitals: Attraction and Retention of Professional Nurses*. Kansas City, MO: American Nurses Association.

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Williams, T. and Howe, R. (1994). "W. Edwards Deming and total quality management: An interpretation for nursing practice." *Journal for Healthcare Quality*, 14(2), 36–39.

Leape, L. (1994) "Error in Medicine." *Journal of the American Medical Association*, 272,(23), 1851–1857.

Prescott, P., Ryan, J.W., Soeken, K.L., Castorr, A.H., Thompson, K.O. and Phillips, C.Y. (1991). "The patient intensity for nursing index: A validity assessment." *Research in Nursing and Health*, 14, 213–21.

Bridges, W. (1991). *Managing Transitions: Making the Most of Change*. Reading, MA: Addison-Wesley Publishing Company.

## Evaluation

Adequate numbers of staff are necessary to reach a minimum level of quality patient care services. Ongoing evaluation and bench-marking related to staffing are necessary elements in the provision of quality care. At a minimum, this should include collection and analysis of nursing-sensitive indicators (ANA, 1997) and their correlation with other patient care trends. It has been shown that the quality of work life has an impact on the quality of care delivered. Therefore, on an ongoing basis, the following trends should be evaluated:

- Work-related staff illness and injury rates (Shogren and Calkins, 1995)
- Turnover/vacancy rates
- Overtime rates
- Rate of use of supplemental staffing
- Flexibility of human resource policies and benefit packages
- Evidence of compliance with applicable federal, state and local regulations
- Levels of nurse staff satisfaction.

Staffing should be such that the quality of patient care is maintained, the quality of organizational outcomes are met and that the quality of nurses' work life is acceptable. *Changes in staffing levels, including changes in the overall number and/or mix of nursing staff, should be based on analysis of standardized, nursing-sensitive indicators. The effect of these changes should be evaluated using the same criteria.* Caution must be exercised when interpreting data related to staffing levels and patterns and patient outcomes in the absence of consistent and meaningful definitions of the variables for which data are being gathered.

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American Nurses Association (1997). *Implementing Nursing's Report Care: A Study of RN Staffing, Length of Stay and Patient Outcomes*. Washington, DC: American Nurses Publishing.

Shogren, B. and Calkins, A. (1995). Minnesota Nurses Association Research Project on Occupational Injury/illness in Minnesota Between 1990–1994. St. Paul, MN, The Minnesota Nurses Association.

# RECOMMENDATIONS

Shifting the nursing paradigm away from an industrial model to a professional one would move the industry and organizations away from the technical approach of measuring time and motion to one that examines myriad aspects of using knowledge workers to provide quality care. This shift would spell the end to the “nurse-is-a-nurse-is-a nurse” mentality by focusing on the complexity of unit activities and levels of nurse competency needed to provide quality patient care. To facilitate this shift, ANA makes the following recommendations:

- A distinct, standardized definition of unit intensity must be developed. Factors to be taken into consideration in developing such a definition include:
  - Number of patients within the unit
  - Levels of intensity of all of the patients for whom care is being provided
  - Contextual issues including architecture and geography of the environment and available technology
  - Level of preparation and experience (i.e., competency) of those providing care.
- Data should be gathered to address the relationship between staffing and patient outcomes, including but not limited to:
  - Improvement in health status
  - Achievement of appropriate self-care
  - Demonstration of health-promoting behaviors
  - Patient length of stay or visit
  - Health-related quality of life
  - Patient perception of being well cared for
  - Symptom management based on guidelines (Mitchell, et al., 1997).

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Mitchell, P.H., Heinrich, J., Moritz, P. and Hinshaw, A.S. (1997). “Outcome measures and care delivery systems: Introduction and purposes of conference.” *Medical Care Supplement*. 35(11), NS1–NS5.

# APPENDIX B

## Registered Nurse Utilization of Unlicensed Assistive Personnel

### Summary

The American Nurses Association (ANA) recognizes that unlicensed assistive personnel provide support services to the registered nurse that are required for the RN to provide nursing care in today's health care settings.

The current changes in the health care environment have and will continue to alter the scope of nursing practice and its relationship to the activities delegated to unlicensed assistive personnel (UAP). The concern is that in virtually all health care settings, UAPs are inappropriately performing functions that are within the legal practice of nursing. This is a violation of the state nursing practice act and is a threat to public safety. Today, it is the nurse who must have a clear definition of what constitutes the scope of practice with the reconfiguration of practice settings, delivery sites and staff composition. Professional guidelines must be established to support the nurse in working effectively and collaboratively with other health care professionals and administrators in developing appropriate roles, job descriptions and responsibilities for UAPs.

The purpose of this position statement is to delineate ANA's beliefs about the use of UAPs in helping provide direct and indirect patient care under the direction of a registered nurse.

### Unlicensed Assistive Personnel

The term unlicensed assistive personnel applies to an unlicensed individual who is trained to function in an assistive role to the licensed nurse in providing patient/client activities as delegated by the nurse. The activities generally can be categorized as either direct or indirect care.

Direct patient care activities are delegated by the registered nurse and assist the patient/client in meeting basic human needs. This includes activities related to feeding, drinking,

positioning, ambulating, grooming, toileting, dressing and socializing and may involve collecting, reporting and documentation data related to these activities.

Indirect patient care activities focus on maintaining the environment and the systems in which nursing care is delivered and only incidentally involve direct patient contact. These activities assist in providing a clean, efficient and safe patient care environment and typically encompass categories such as housekeeping and transporting, clerical, stocking and maintaining supplies.

## Utilization

Monitoring the regulation, education and utilization of unlicensed assistive personnel to the registered nurse has been ongoing since the early 1950s. While the time frames and environmental factors that influence policy may have changed, the underlying principles have remained consistent:

**IT IS THE NURSING PROFESSION** that determines the scope of nursing practice;

**IT IS THE NURSING PROFESSION** that defines and supervises the education, training and utilization for any unlicensed assistant roles involved in providing direct patient care;

**IT IS THE RN** who is responsible and accountable for the provision of nursing practice;

**IT IS THE RN** who supervises and determines the appropriate utilization of any unlicensed assistant involved in providing direct patient care; and

**IT IS THE PURPOSE** of unlicensed assistive personnel to enable the professional nurse to provide nursing care for the patient.

ANA assumes that the provision of safe, accessible and affordable nursing care for the public may include the appropriate use of unlicensed assistive personnel and that the changes in the health care environment have and will continue to alter the activities delegated to UAPs.

Therefore, it is the nursing profession's responsibility to establish and the individual nurse to implement the standards for the practice and utilization of UAPs involved in assisting the nurse in direct patient care activities. This is accomplished through national standards of practice and the definitions of nursing in state nursing practice acts.



To understand the roles and responsibilities between the RN and the UAP, ANA recognizes that clarifying professional nursing care delivery and the activities that can be delegated within the domain of nursing is essential. The act of delegation is the transfer of responsibility for the performance of an activity from one person to another while retaining accountability for the outcome.

It is the RN who uses professional judgment to determine the appropriate activities to delegate. The determination is based on the concept of protecting the public and includes consideration of the needs of the patients, the education and training of the nursing and assistive staff, the extent of supervision required and the staff workload. Any nursing intervention that requires independent, specialized, nursing knowledge, skill or judgment cannot be delegated.

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Effective Date: December 11, 1992 [Please note: ANA work on the UAP issue has been ongoing. For additional information see House of Delegates (HOD) policies, HOD Summaries of Proceedings, and Nursing Trends and Issues.]

Status: New Position Statement

Originated by: Congress on Nursing Economics Congress of Nursing Practice

Adopted by: ANA Board of Directors

Related Past Action:

Scope of Nursing Practice, House of Delegates, 1987

ANA Opposition to the AMA proposal to Create Registered Care Technologists, House of Delegates, 1988

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## Attachment I: Definitions Related to ANA 1992 Position Statements on Unlicensed Assistive Personnel

The ANA Task Force on Unlicensed Assistive Personnel developed the following definitions to clarify the ANA position statements on the role of the Registered Nurse working with unlicensed assistive personnel. These definitions reflect a review of current regulatory, legal practice and professional terminology and are intended to be used only in the context of these position statements.

**UNLICENSED ASSISTIVE PERSONNEL:** An unlicensed individual who is trained to function in an assistive role to the licensed registered nurse in providing patient/client care activities as delegated by the nurse. The term includes, but is not limited to nurses aides, orderlies, assistants, attendants or technicians.

**TECHNICIAN:** A technician is a skilled worker who has specialized training or education in a specific area, preferably with a technological interface. If the role provides direct care or supports the provision of direct care (Monitor tech, ER tech, GI tech), it should be under the supervision of a Registered Nurse.

**DIRECT PATIENT CARE ACTIVITIES:** Direct patient care activities assist the patient/client in meeting basic human needs within the institution, at home or in other health care settings. This includes activities such as assisting the patient with feeding, drinking, ambulating, grooming, toileting, dressing and socializing. It may involve collecting, reporting, and documenting data related to the above activities. This data is reported to the RN, who uses the information to make a clinical judgment about patient care. Delegated activities to the UAP do not include health counseling or teaching, nor do they require independent, specialized nursing knowledge, skill or judgment. (Judgment is defined as the intellectual process that a nurse exercises in forming an opinion and reaching a clinical decision based upon an analysis of the evidence or data.)



**INDIRECT PATIENT CARE ACTIVITIES:** Indirect patient care activities are necessary to support patients and their environment, and only incidentally involve direct patient contact. These activities assist in providing a clean, efficient and safe patient care milieu and typically encompass chore services, companion care, housekeeping, transporting, clerical, stocking and maintenance tasks.

**DELEGATION:** The transfer of responsibility for the performance of an activity from one individual to another while retaining accountability for the outcome. Example: the nurse, in delegating an activity to an unlicensed individual, transfers the responsibility for the performance of the activity but retains professional accountability for the overall care.

**ASSIGNMENT:** The downward or lateral transfer of both the responsibility and accountability of an activity from one individual to another. The lateral or downward transfer of skill, knowledge and judgment must be made to an individual. The activity must be within the individual's scope of practice.

**SUPERVISION:** The active process of directing, guiding and influencing the outcome of an individual's performance of an activity. Supervision is generally categorized as on-site (the nurse being physically present or immediately available while the activity is being performed) or off-site (the nurse has the ability to provide direction through various means of written and verbal communications).

# GLOSSARY

Acceptable	An overall positive assessment of the quality of care made by an individual or group. It is usually based on many dimensions of care including cost, appropriateness, availability and effectiveness (JCAHO, 9).
Acuity	The degree of dependency or functional status of the patient; the degree or state of disease or injury existing in a patient prior to treatment. The greater the level of acuity, the greater the number of health care resources (e.g., health professionals, laboratory services, operating rooms, special care units) required to treat the patient (JCAHO, 428).
Aggregate patient needs	Consideration of the totality of the patients for whom care is being provided. Not predicated on a simple quantification of the needs of the “average” patients but also includes the “outliers.” These areas include: psychosocial needs of patient and family member; amount of teaching to be done; care needs that, on the surface, are unrelated to current illness but still require care; amount of support services patient requires and who performs these; usual number of discharges, admissions, transfers, accommodations (ANA <i>Principles for Nurse Staffing</i> — Appendix A).
Antecedent	A preceding event, condition, or cause (Merriam-Webster Online).
Appropriate	The degree to which the care and services provided are relevant to an individual’s clinical needs, given the current state of knowledge (JCAHO, 104).

Assignment	The downward or lateral transfer of both the responsibility and accountability of an activity from one individual to another. The lateral or downward transfer of skill, knowledge and judgment must be made to an individual. The activity must be within the individual's scope of practice (ANA <i>Registered Nurse Utilization of Unlicensed Assistive Personnel</i> — Appendix B).
Assignment despite objection	A registered nurse (RN) receiving an assignment that in her or his professional judgment places the patients at risk has an obligation to take action. The action of refusing an assignment requires the immediate completion of a form utilized to provide documentation that in the professional registered nurse's opinion, the assignment is unsafe and places the patients at risk (United American Nurses).
Benchmarking	The continual and collaborative discipline of measuring and comparing the results of key work processes with those of the best performers. It is learning how to adapt best practices learned through the benchmarking process that promotes breakthrough process improvements and builds healthier communities (Gift, RG and Mosel, D).
Competency	An individual's capability to perform up to defined expectations (JCAHO, 201).
Complexity of care	A quantification of patient antecedents (including precipitating events, episode of care, intensity and so forth), volume and transactional issues (ANA <i>Principles for Nurse Staffing</i> — Appendix A).
Delegation	The transfer of responsibility for the performance of an activity from one person to another while retaining accountability for the outcome (ANA <i>Principles for Delegation</i> ).

Deployment	To spread out, utilize or arrange, especially strategically (Merriam-Webster Online).
Intensity	The amount or degree of service provided to a patient (JCAHO, 401).
Matrix organization	An organization that uses a multiple command system whereby an employee may be accountable to a particular manager for overall performance as well as to one or more leaders of particular projects (JCAHO, 1998).
Organizational context	Architecture (geographic dispersion of patients, size and layout of individual patient rooms, arrangement of entire patient care units and so forth); technology (beepers, cellular phones, computers); same unit or cluster of patients (ANA <i>Principles for Nurse Staffing</i> — Appendix A).
Quality (of) care	The degree to which health care services for individuals and populations increases the probability of desired health outcomes and is consistent with current professional knowledge of best practice (IOM, 1999).
Ratio	The relationship between two counted sets of data, which may have a value of zero or greater (JCAHO, <a href="http://jcaho.org/dscc/dsc/application/dsc_glossary">jcaho.org/dscc/dsc/application/dsc_glossary</a> ).
Staffing	The analysis and identification of a health care organization's human resource requirements, recruitment of persons to meet those requirements and initial placement of those persons to ensure adequate numbers, knowledge and skills to perform the organization's work (JCAHO, 749).
Sufficient	Enough to meet the needs of a situation or a proposed end (Merriam-Webster Online).
Transactional	Related to a corresponding action or activity involving two parties or things that reciprocally affect or influence each other (Merriam-Webster Online).

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Available from American Nurses publishing (1-800-637-0323) is *Principles for Nurse Staffing with Annotated Bibliography*, which provides background information on which the principles are based.

Single copies of this brochure are available free to constituent member association members only by calling 1-800-274-4ANA. Ask for item UGPNS-1. Multiple copies of this brochure and information about ordering other ANA publications can be obtained by calling 1-800-637-0323.

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Registration Fee must accompany registrations with check or money order payable to:

**AONE Hawaii**  
932 Ward Avenue, Suite 430  
Honolulu, Hawaii 96814

For further information, contact Chris Lima at:  
(808) 585-5230 or Teresa Bryan at: tbryan@queens.org.

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AONE Hawaii Chapter

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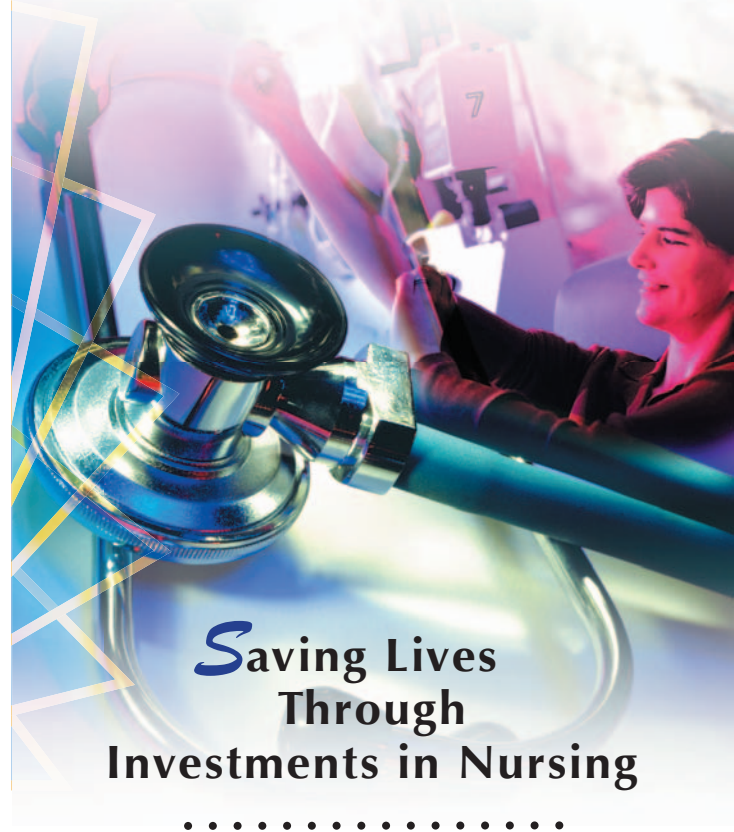
REGISTRATION FEES: (by October 16)

- \$150 AONE member - Includes annual business meeting, conference and meals.
- \$175 Non-AONE member - Conference and lunch.
- \$65 Nursing Students - Conference and Lunch. Student ID required at registration.
- \$200 All Attendees - Late Registration (Oct. 17-31).

NO REFUNDS

# AONE

Hawaii Chapter



## Saving Lives Through Investments in Nursing

AONE-Hawaii  
Annual Conference  
November 3, 2006  
Hale Koa Hotel  
Waikiki Ballroom

**Keynote Speaker:**  
Linda Aiken, PhD, FAAN, FRCN, RN

# Saving Lives Through Investments in Nursing

## CONFERENCE OBJECTIVES

- To examine the link between medical errors and nurse surveillance
- To explore evidence of the association between staffing, education, work environment and nurse retention and patient outcomes
- To consider what changes are required to improve patient and nurse outcomes
- To consider applications of this research to the local context

## SILENT AUCTION

Once again AONE will have a silent auction available to conference participants. All proceeds support AONE scholarships for Nursing Students.

## CONTINUING EDUCATION CREDIT

The CE activity #AO8-0086 is approved for 4.8 contact hours by The Queen's Medical Center, PA-52/May/08, which is an approved provider of continuing education by the Washington State Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission of Accreditation.

## NOVEMBER 3, 2006 PROGRAM

- 6:45-7:30: Registration for AONE Members
- 7:30-8:30: AONE Annual Business Meeting & Breakfast (AONE members only)
- 8:30-9:00: Registration for non-AONE members
- 9:00-9:15: Welcome & Introductions
- 9:15-10:15: Medical Error and Nurse Surveillance
- 10:15-10:35: Break & Silent Auction Bids
- 10:35-11:35: The Practice Environment & Impact on Outcomes
- 11:35-12:20: Lunch & Closing Auction Bids
- 12:20-1:20: Improving Outcomes
- 1:20-2:20: Panel Discussion
- 2:20-2:30: Closing Remarks & Winners of Silent Auction Announced

\*\*\*Parking is \$2.00 with validation

## EVENT CO-SPONSORS

AONE-HI and The Queen's Medical Center are co-sponsors for the event. Additional funding provided through educational grants from the following:

- Castle Medical Center
- Hawaii Nurses' Association
- Hawaii Pacific Health
- Hawaii State Center for Nursing
- Healthcare Association of Hawaii
- Hoana Medical, Inc.
- Queen Emma Nursing Institute
- University of Hawaii School of Nursing & Dental Hygiene
- University of Phoenix



Linda Aiken,  
PhD, FAAN, FRCN, RN

Dr. Aiken has been a major contributor to health workforce and outcomes research for the past two decades. Her recent work has focused on accounting for variation in hospital outcomes and building the evidence-base of superior outcomes in magnet hospitals. Her research focuses on the substantive and methodological advances in health outcomes research across a variety of areas including health care systems, hospital quality of care, AIDS care and prevention, innovative models of primary care, and mental health services. Most recently, she has been appointed Director of a new nursing quality initiative in Russia and Armenia sponsored by the American International Health Alliance in conjunction with Credentialing International of the American Nurses Credentialing Center with a goal of assessing the applicability of magnet hospital standards under developing world conditions.

The American Organization of Nurse Executives (AONE) in Hawaii is dedicated to the mentoring and support of nurse leaders. AONE provides a forum of networking, sharing and sorting information and responding to issues impacting on nursing and health care in Hawaii.



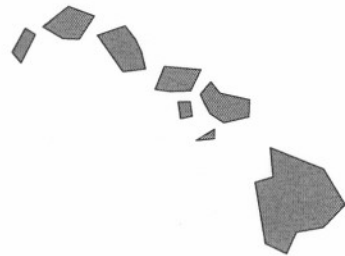
# Healthcare Association of Hawaii



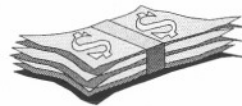
## Financial Trends of Hawaii's Hospitals and Nursing Facilities November 2005

Prepared by  
**ERNST & YOUNG**  
Quality In Everything We Do

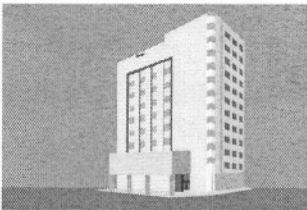
# Healthcare Industry in Hawaii



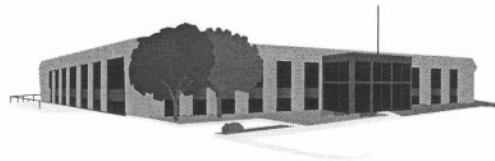
Hawaii



Healthcare Industry



Health Services Sector



Hospitals and Nursing Facilities

- Hawaii's economy is made up of several key industries
- Healthcare industry in Hawaii includes all aspects of healthcare - providers, pharmaceuticals, research, insurance plans, etc.
- A major part of the healthcare industry is the health services sector, which includes providers such as physicians, clinics, hospitals and nursing facilities



# Health Services in Hawaii

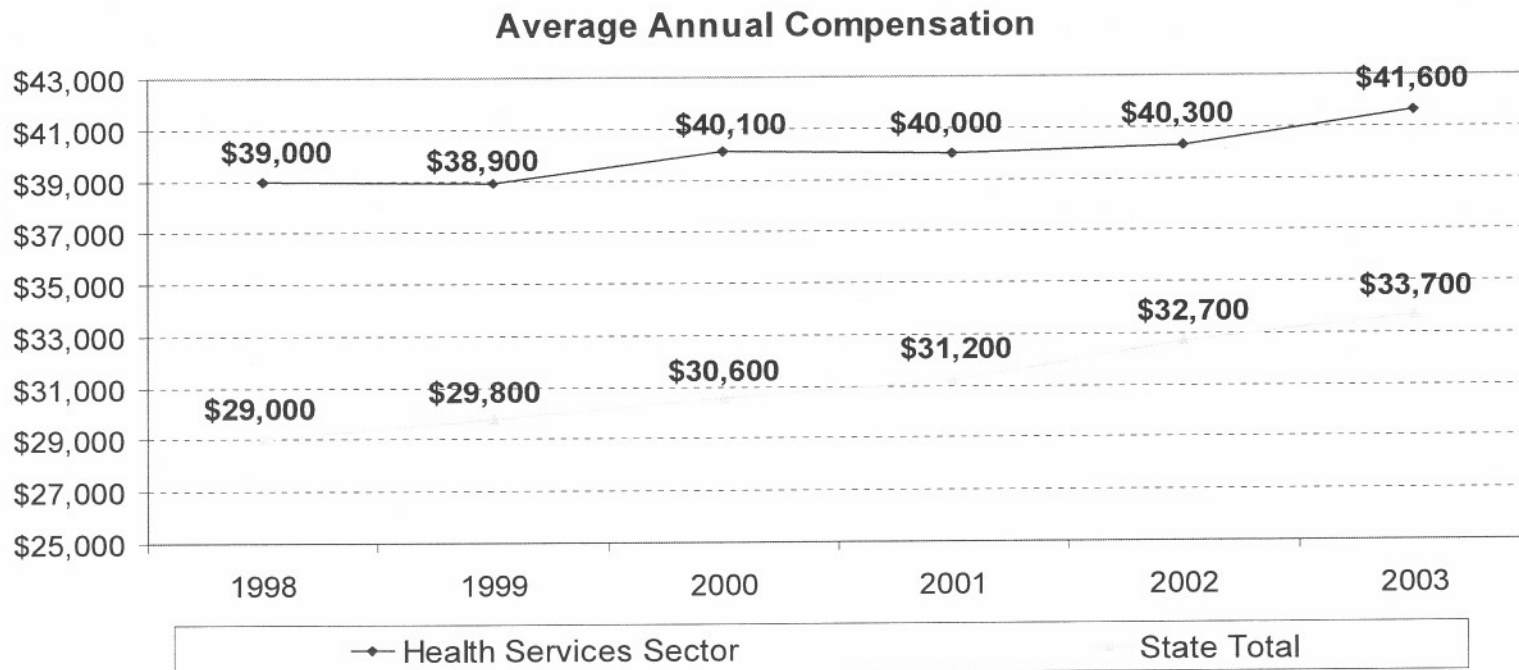
- Healthcare industry is the second largest private industry in Hawaii
- Health services sector provided \$3,216,000,000 (\$3 billion) toward the state gross product in 2003
- Health services sector is one of the larger employers of the healthcare industry and Hawaii's economy
  - Health services sector employed more than 40,000 individuals in 2003
  - Health services sector paid out more than \$1,600,000,000 (\$1.6 billion) in wages in 2003

Source: State of Hawaii Data Book



# Health Services in Hawaii

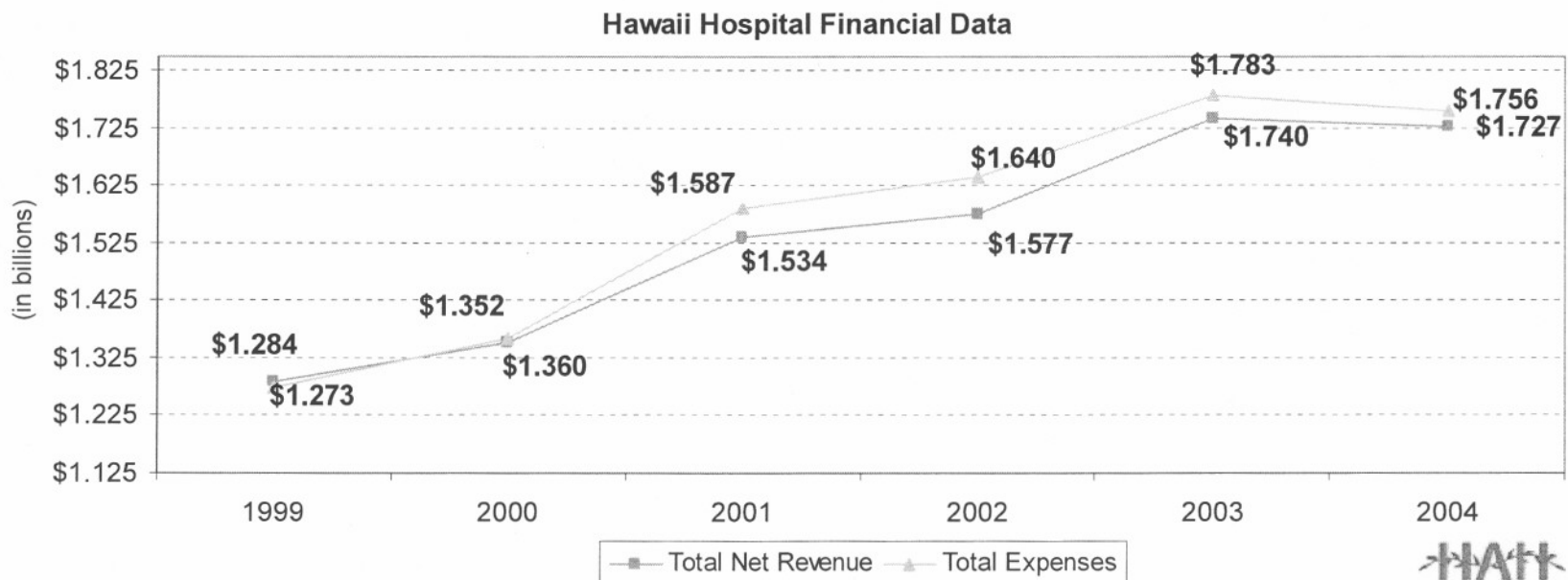
- Health services sector provides its employees with a higher annual average compensation than the average for the State
- Health services sector pays on average almost 23% more than the State average



Source: State of Hawaii Data Book

# Hawaii Hospital Financial Data

- Hawaii hospital financial data shows that expenses exceeded revenues beginning in 2000 with the losses continuing
- Hawaii hospitals in total experienced net losses since 2000
- Other operating (cafeteria, parking, etc.) and nonoperating revenues (interest and investment income, etc.) are needed in addition to net patient revenues to help cover expenses
- Personnel expenses comprise approximately 50% of hospital expenses and benefits are approximately 18% of payroll costs



Source: American Hospital Association, 2006 Hospital Statistics

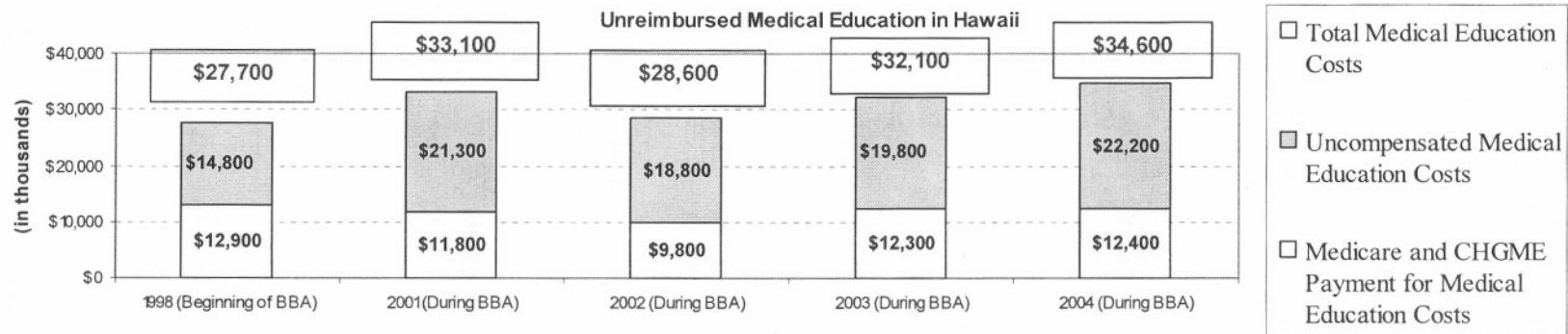


# Contributions to Community

- In addition to providing medical care, Hawaii's hospitals and nursing facilities provide a significant service to the community through support of:
  - Medical education
  - Community programs
  - Provision of services regardless of ability to pay
- Hospitals and nursing facilities provide these programs because of their benefit to the community, even though they result in additional costs

# Medical Education

- Seven hospitals have teaching programs (interns and residents)
- Teaching programs support the School of Medicine and medical research
- Payment is received mainly from Medicare but has decreased due to the Balanced Budget Act (BBA)
- A federal program was established to provide additional payment to children's hospitals for medical education (CHGME program)

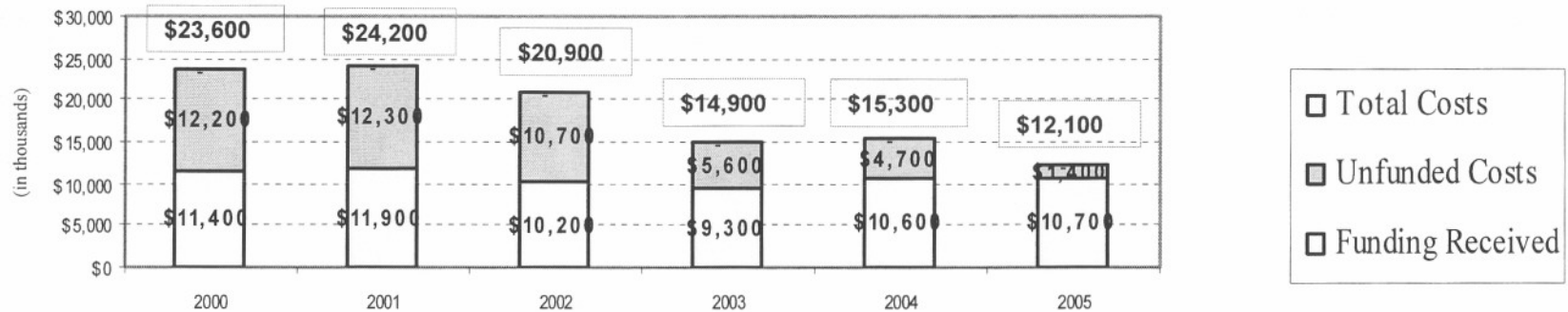


Source: Hawaii Residency Program study, information from teaching hospitals as-filed cost reports

# Community Programs

- Medicare and Medicaid do not pay for these programs
- State and federal funds received through appropriations and grants are minimal
- Six year total program costs is \$111,000,000 with only \$64,100,000 received in funding for total unfunded (net) costs of \$46,900,000
- Average annual unfunded cost from 2000 to 2005 is \$7,800,000
- Examples include alcohol and drug treatment, services for the elderly, programs on Hawaiian nutrition, programs for adolescents, school health programs, family planning programs, counseling services and outpatient clinics for the underserved and uninsured

Community Programs



Source: Information provided by *five* hospitals and *two* nursing facilities

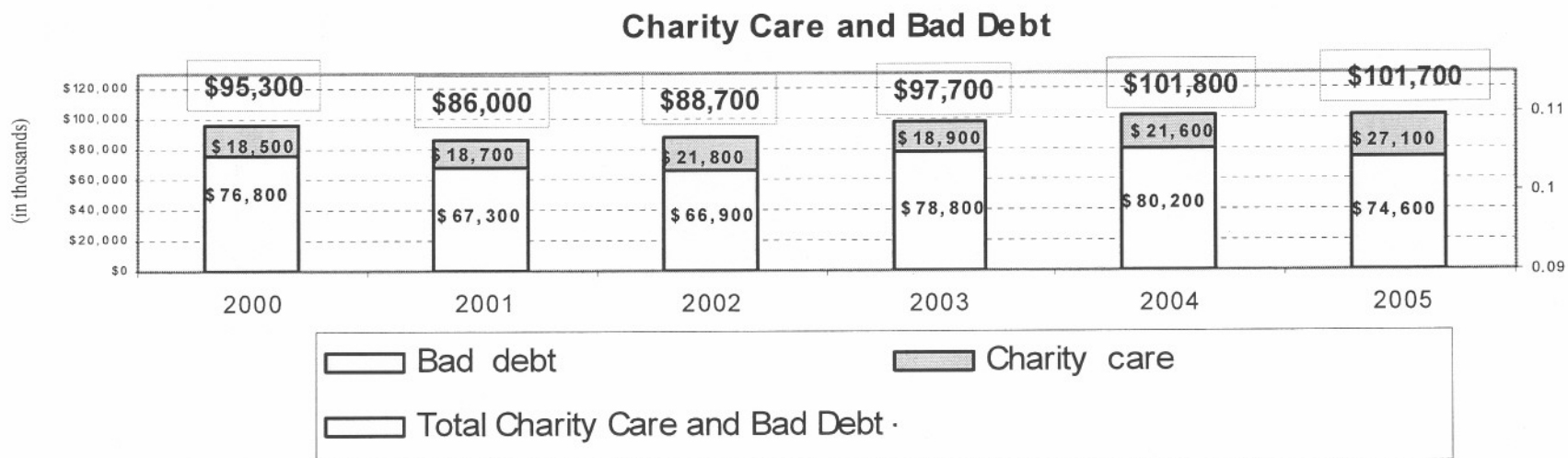


# Charity Care and Bad Debt

- Hawaii's hospitals and nursing facilities provide services regardless of ability to pay. Services provided to those without the ability to pay result in bad debt or charity care
  - Bad debt is when the hospital cannot collect the amount due from a patient (services are provided with partial or no payments received)
  - Charity care is when the hospital never expected to collect payment from the patient (services are provided at no charge to patient)
- Generally, as the percentage of uninsured in Hawaii increases, bad debt and charity care increases
- Generally, as the percentage of unemployed in Hawaii increases, the percentage of uninsured increased
- Not all that are employed are insured even with employer-based insurance

# Charity Care and Bad Debt

- Bad debt and charity care represent the amounts not collected as payment for services rendered
- Average annual charity care and bad debt from 2000 to 2005 is \$95,200,000
- Six year total is \$444,600,000 in bad debt and \$126,600,000 in charity care for total of \$571,200,000



Source: Bad Debt and Charity Care information provided by 27 hospitals and 7 nursing facilities.



# Negative Payment Impact Due to BBA

- Medicare is a significant source of payment for hospital, outpatient and nursing facility services
- Impact of the Balanced Budget Act (BBA) on Hawaii's facilities has been significant
- Average annual BBA impact from 1998 to 2003 (years impact was estimated) was a reduction of \$29,639,000 for Hawaii which is about 2% of total net patient revenues
- Payment reduction averaged 10% per year for the six years based on the anticipated Medicare payment before BBA
- BBA is still in effect, payment reductions are still in place

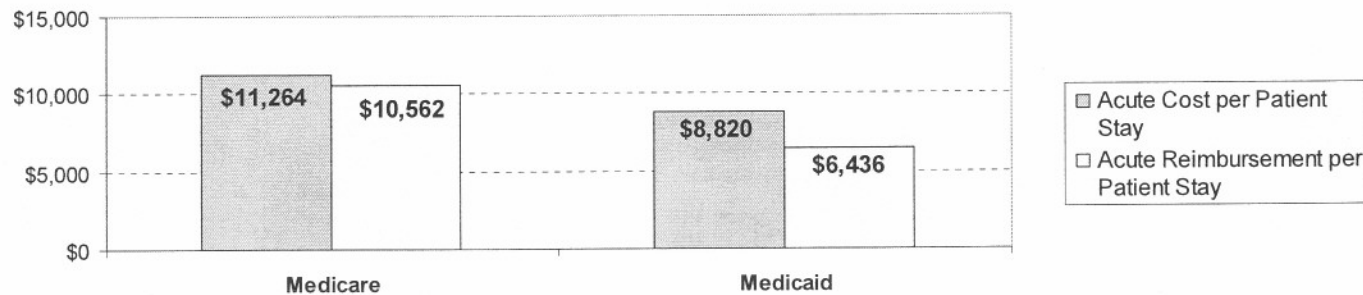
Amounts reflect the impact on 17 hospitals including the hospital-based skilled nursing units (approximately 90% of the total hospital beds) and 5 freestanding nursing facilities



# Federal Payments in Hawaii

- Medicare and Medicaid do not pay for the full cost of hospital services provided to beneficiaries in Hawaii
- Burden of the unpaid costs can no longer be shared with the private sector as insurers are also looking to reduce payments to providers

Medicare and Medicaid Costs and Payment per Patient Stay (2004)

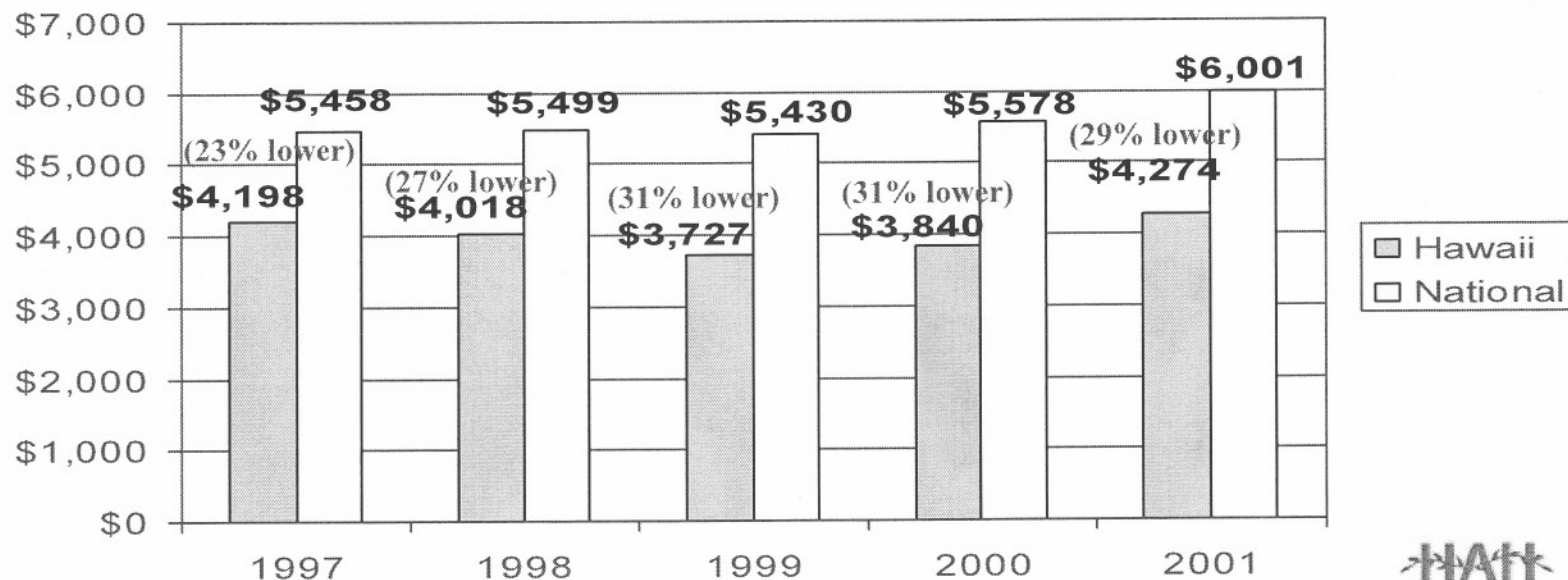


- Total difference between Medicare cost and payment is \$18,495,000 (\$702/patient stay X 26,346 patient stays)
- Total difference between Medicaid cost and payment is \$21,888,000 (\$2,384/patient stay X 9,181 patient stays)

Source: Facility as-filed cost report data

# Medicare Payments in Hawaii

- Hawaii has one of the lowest per enrollee Medicare payments
- Medicare benefit payments in 2001 totaled \$718,000,000
- Hawaii's average payment per enrollee in 2001 is 29% lower than the national Medicare payment
- Differential may be due to many factors including utilization of services
- With 168,000 enrollees in Hawaii in 2001, the differential is approximately \$290,100,000



Source: The Universal Healthcare Almanac, updated information not available



# Medicaid Impact

There are five major components or programs that could impact providers

- Act 294
- Medicaid DSH
- Medicaid federal medical assistance percentage (FMAP)
- QUEST Expansion
- State Children's Health Insurance Program (SCHIP)

## **Act 294**

- Nursing facilities received payments based on the historical costs of the facility, subject to limits (different limits for hospital-based and freestanding facilities)
- Act 294, SLH 1998 required the payment be based on the acuity of the resident as opposed to hospital-based and freestanding
- Financial impact has generally been a reduction in payment for the hospital-based nursing facilities and certain freestanding nursing facilities and an increase in payment to the majority of the freestanding facilities.



# Medicaid Impact

## Act 294 (continued)

- To minimize the impact, a phase-in plan was developed with full implementation scheduled by 2008
- Total impact of implementing Act 294 to the Medicaid budget is to be neutral
- Reimbursement rates established as a result of Act 294 need to be considered in the implementation of QUEST Expansion
- Impact of Act 294 on the number of already limited nursing facility beds in Hawaii has not been determined
  - Number of hospital-based nursing facility beds could be reduced due to lower payments
  - Higher freestanding payment could encourage the addition of freestanding beds which has been limited due to lower payments



# Medicaid Impact

## Medicaid DSH

- Prior to the implementation of QUEST, Hawaii received disproportionate share hospital (DSH) payments from Medicaid, which provided additional payments to the hospitals
- Current DSH allotment for Hawaii is \$0
- Hawaii and Tennessee are the only states that do not receive any additional payments
- Medicaid DSH allotments would increase the funds available to pay for Medicaid and QUEST services
- The hospital providers in Hawaii are continuing their work to once again have a Medicaid DSH allotment for Hawaii
- DSH allotments for Hawaii averaged \$34 million prior to QUEST

Source: Federal Register



# Medicaid Impact

## Medicaid Federal Medical Assistance Percentages (FMAP)

- Federal government pays for a portion of the State's Medicaid costs
- Portion paid by the Federal government is based on the FMAP
- If the FMAP is 58.81%, for every dollar spent by the State on Medicaid, the State receives 58.81 cents from the Federal government
- At one time, FMAP for Hawaii was 50%, which is the lowest percentage
- FMAP has been increasing:

	2002	2003	2004	2005	2006
Hawaii FMAP	56.34%	58.77%	58.90%	58.47%	58.81%

- If approximately \$750,000,000 is spent on Medicaid (federal and state funds), the amount paid by the federal government is \$441,000,000
- If State spending remains constant, for every 1% increase in the FMAP, the State receives an additional \$7,500,000 in Federal funding
- The additional funding should allow the State to provide better payments to the providers of service

Source: Federal Register



# Medicaid Impact

## SCHIP

- Program provides health benefits to uninsured children
- In 2004, there were 13,719 children enrolled in SCHIP in Hawaii
- Federal matching percentage for SCHIP is currently 71.17% thus, for every dollar spent by the State, the Federal government pays for approximately 71 cents
- In 2003, there were 25,180 uninsured children (18 years and younger)
- Each child enrolled in SCHIP reduces the uninsured population
- Uninsured tend to use expensive emergency room services, wait longer to obtain care which may result in bad debt and charity care

Source: State Health Facts, Kaiser Family Foundation



# Medicaid Impact

## **QUEST Expansion**

- The QUEST Program was implemented in 1994 for certain Medicaid beneficiaries
- The aged, blind and disabled (ABD) remained in the traditional fee-for-service (FFS) Medicaid program
- Medicaid plans to implement QUEST for the ABD
- Under QUEST, health plans provide the services to beneficiaries, manage their care and pay the providers
- Medicaid has submitted its request to expand the QUEST Program for the ABD
- The providers would negotiate payment for services with the health plans just as is currently done for QUEST





# Medicaid Impact

## QUEST Expansion (continued)

- The impact on the providers has not been determined as it will depend on the negotiated payment with the health plans
- Questions that have been raised include:
  - What will be the financial impact to the providers?
  - What will be the impact to the ABD recipients who are more vulnerable and frail?
  - Will QUEST be able to control the Medicaid cost of services for the ABD?
  - Will there be proper coordination of care?
  - Does Hawaii have sufficient home and community based services to care for those not placed in a nursing facility?



# Who Pays

- Those who provide health insurance (businesses or private payors) are paying for the unfunded costs
- Health insurance premiums have generally continued to increase

## Percentage Increase in Premiums

	<u>2002-2003</u>	<u>2003-2004</u>	<u>2004-2005 *</u>
HMSA	11%	8%	3.4%
HMAA	7%	9%	6.0%
UHA	12%	-4%	5.0%
Kaiser	10%	12%	3.0%

- Average annual increase in family health insurance premiums in the US from 1996 to 2004 was 9%
- Plans must now file with the Insurance Division for approval of premium increases.

\* Rate increases for 2004-2005 are proposed rate increases.

Source: October 14, 2005, Pacific Business News

# Who Pays

- Both Employees and Employers are paying for health insurance

Portion of Health Insurance Premiums Paid by Employee and Employer (2003)

	National		Hawaii	
	\$	%	\$	%
<b>Employee Portion</b>				
Single Coverage	\$42	16%	\$21	8.0%
Family Coverage	\$201	27%	\$171	26%
<b>Employer Portion</b>				
Single Coverage	\$221	84%	\$231	92.7%
Family Coverage	\$543	73%	\$487	74%

- Increases in health insurance premiums have outpaced inflation and wage increases in Hawaii and nationally

Inflation and Wage Increases (2003)

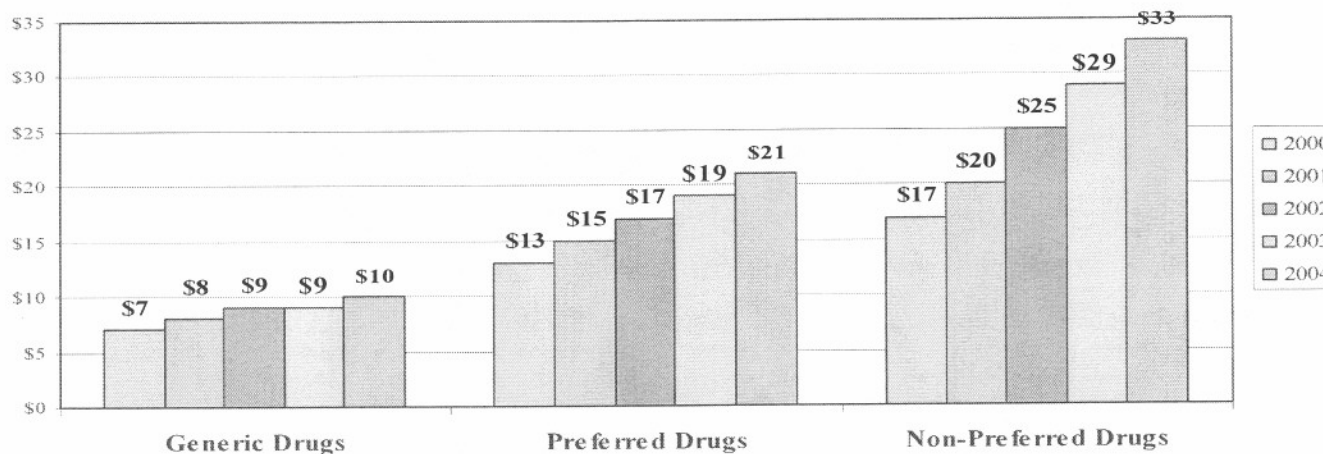
	National	Hawaii
<b>Inflation</b>	2.2%	2.3%
<b>Wage Increases</b>	3.0%	3.0%

Source: State of Hawaii Data Book, US Dept of Labor and Kaiser Family Foundation

# Prescriptions - Costs

- Increasing drug costs have contributed to the higher medical costs and insurance premiums
  - Retail prescription drug costs have increased an average of 7.4% each year from 1993-2003
- Co-payments for drugs, particularly brand name drugs have increased

National Average Prescription Drug Co-Payments



**Note:** Preferred Drugs are on the “preferred list” or formulary for third party payors. They may be brand or generic.  
 Non-Preferred Drugs are any drugs not on the “preferred list” or formulary and also may be brand or generic.

Source: Kaiser Family Foundation / Health Research and Educational Trust, *Employer Health Benefits, 2004 Annual Survey*, September 2004, Exhibit 9.2 and *Prescription Drug Trends*, October 2004



# Prescriptions - Taxes

- Hawaii is one of two states that has a sales or use tax on prescription drugs
  - Illinois generally taxes sales of prescription and non-prescription drugs at a reduced rate
  - States such as Georgia, Michigan and Pennsylvania specifically exempt prescription drugs
- Hawaii does not directly tax the drug purchaser
  - Tax is imposed on the seller and
  - Seller typically passes on the tax to the buyer

# Financial Trends of Hawaii's Hospitals and Nursing Facilities

- Unfunded amounts incurred by the hospitals and nursing facilities for community support average \$122,900,000 each year
- Hospitals and nursing facilities also incur significant amounts to comply with the Health Insurance Portability and Accountability Act (HIPAA), Patient Safety requirements and other regulatory matters and increases in salaries

Unfunded Costs	2000	2001	2002	2003	2004	2005 ^	Total
Medical Education	\$ 14,800,000	\$ 21,300,000	\$ 18,800,000	\$ 19,800,000	\$ 22,200,000	\$ 22,200,000	\$ 119,100,000
Community Programs	12,200,000	12,300,000	10,700,000	5,600,000	4,700,000	1,400,000	46,900,000
Bad Debt/Charity Care	95,300,000	86,000,000	88,700,000	97,700,000	101,800,000	101,700,000	571,200,000
<b>Total</b>	<b>\$ 122,300,000</b>	<b>\$ 119,600,000</b>	<b>\$ 118,200,000</b>	<b>\$ 123,100,000</b>	<b>\$ 128,700,000</b>	<b>\$ 125,300,000</b>	<b>\$ 737,200,000</b>

- Changes in Medicaid and QUEST will also impact the hospitals and nursing facilities including the phase-in of Act 294 and expansion of QUEST to the ABD

^ - Assumed the same costs for Medical Education for 2005 as reported in the cost reports for 2004.



## Factors Impacting Hawaii's Hospitals and Nursing Facilities

- Increases in premiums charged by health insurers do not necessarily translate into increased payments to providers
- Increases in rates charged by the facilities do not necessarily translate into increased patient revenues
- Although the hospitals and nursing facilities have taken steps to control costs, certain cost increases are not within the facility's control:
  - Increases in personnel costs due to contract negotiations and shortages
  - Increases in the cost of pharmaceuticals and medical supplies
  - Increases in insurance premiums (especially after September 11)
  - Increases in costs due to corporate compliance programs, HIPAA and other regulations



## Factors Impacting Hawaii's Hospitals and Nursing Facilities

- Medicare is the main payor of hospital and outpatient services for the elderly
- Medicaid is the main payor of nursing facility services for the elderly
- Elderly population is growing and will be a larger percentage of the population
- As the elderly population grows, more inpatient, outpatient and nursing facility services will be paid for by Medicare and Medicaid
- Medicare and Medicaid payment typically does not cover costs and both programs continue to look for ways to control payment amounts
- As costs increase, payments may not keep up resulting in lower payments and higher costs
- Payment amounts are fixed per day, discharge or visit. Provision of more services does not result in increased payment
- As the elderly utilize more services, payments may not keep pace with the utilization levels required to maintain quality care
- Providers are also not able to obtain increased payments from other payors that are also looking to reduce their costs to minimize increases in insurance premiums





# Impact on Community and Industry

Financial losses may result in the following:

- Reduced access to quality care
- Reductions in full-time equivalents and salaries
- Decreased bond ratings due to the poorer financial results which results in higher interest payments
- Reductions or delays in capital expenditures (i.e., technology)
- Reductions or limits in the amount provided for medical research

# Joint Commission Update: 2007 Accreditation Process and Beyond

## A Custom Education Program for Healthcare Association of Hawaii

September 13, 2006	Agenda	TAB
7:30 - 8:15 am	Registration and Continental Breakfast	
8:15 – 9:45 am	Welcome and Opening Remarks <ul style="list-style-type: none"><li>• Updates to JCAHO's Accreditation Process:</li><li>• Unannounced Surveys<ul style="list-style-type: none"><li>• Accreditation Participation Requirements</li></ul></li><li>• Validation Surveys</li><li>• On-site Survey<ul style="list-style-type: none"><li>• Changes to survey process</li></ul></li><li>• Update on Continuous Periodic Performance Review</li><li>• Electronic Sentinel Events</li><li>• Electronic SOC</li></ul>	1
9:45 – 10:45 am	New Standards for 2006-2007 <ul style="list-style-type: none"><li>• The newest hospital standards and elements of performance by functional area</li><li>• Mid-year releases and standards planned for 2007 by functional area</li></ul>	2
10:45 – 11:00 am	<b>Break</b>	
11:00 – 12:00 am	New Standards for 2006-2007 continued	2
12:00 – 1:00 pm	<b>Lunch on your own</b>	
1:00 – 2:15 pm	National Patient Safety Goals: <ul style="list-style-type: none"><li>• 2005 –2006 Trends</li><li>• 2007 Goals and Requirements</li></ul>	3
2:15 –3:00 pm	JCAHO Challenging Standards <ul style="list-style-type: none"><li>• Provision of Care, Treatment and Services</li></ul>	4
3:00 – 3:15 pm	<b>Break</b>	
3:15 – 4:00 pm	JCAHO Challenging Standards <ul style="list-style-type: none"><li>• Surveillance, Prevention and Control of Infections</li></ul>	5
4:00 – 4:30 pm	Final Questions & Answers	
4:30 pm	<b>Adjourn</b>	

# Joint Commission Update: 2007 Accreditation Process and Beyond

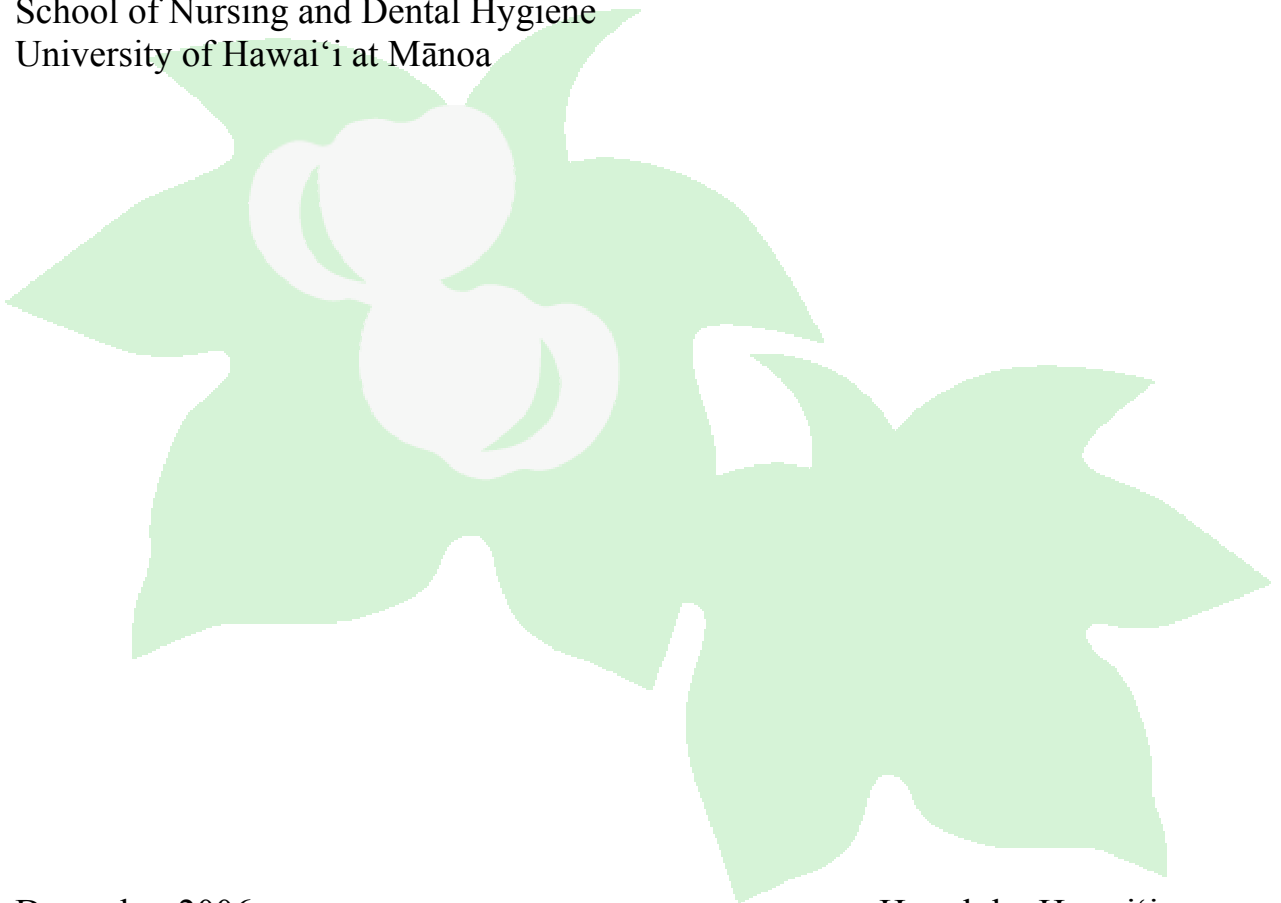
## A Custom Education Program for Healthcare Association of Hawaii

September 14, 2005	Agenda	TAB
7:30 – 8:15 am	Registration and Continental Breakfast	
8:15 – 9:00 am	JCAHO Challenging Standards <ul style="list-style-type: none"><li>• Medical Staff</li></ul>	6
9:00 – 10:00 am	JCAHO Challenging Standards <ul style="list-style-type: none"><li>• Medication Management</li><li>• Information Management</li></ul>	7
10:00 – 10:15 am	<b>Break</b>	
10:15 – 11:15 am	JCAHO Challenging Standards <ul style="list-style-type: none"><li>• Nursing</li><li>• Rights and Ethics</li><li>• Improving Organization Performance</li></ul>	8
11:15 – 12:15 pm	JCAHO Challenging Standards <ul style="list-style-type: none"><li>• Leadership</li><li>• Management of Human Resources<ul style="list-style-type: none"><li>○ Appropriate Staffing Patterns</li></ul></li></ul>	9
12:15 – 1:15 pm	<b>Lunch on your own</b> Optional Seminars during Lunch Topics To Be Announced on Day 1	
1:15 – 2:15 pm	JCAHO Challenging Standards Environment of Care	10
2:15 – 2:45 pm	JCAHO Update: <ul style="list-style-type: none"><li>• Scoring Methods</li></ul>	11
2:45 – 3:00 pm	<b>Break</b>	
3:00 – 4:00 pm	Post-Survey Activities: <ul style="list-style-type: none"><li>• Reports from Joint Commission throughout the accreditation cycle</li><li>• Quality Reports</li><li>• Continuous Readiness Strategies</li></ul>	12
4:00 – 4:30 pm	Questions and Answers	
4:30 pm	Adjourn	

# **Nurse Staffing and Patient Outcomes: Examining the Evidence in Acute Care and Nursing Homes**

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## I. Introduction

The Senate Concurrent Resolution (S.C.R. NO.76, S.D.1) is titled “Urging Healthcare Facilities in the State of Hawaii to Implement the ‘*Utilization Guide for the American Nurses Association Principles for Safe Staffing.*’”

The Institute of Medicine’s (IOM) report, “*To Err is Human: Building a Safer Health System*” (2000) <sup>1</sup> acknowledges

‘the availability of nurses, the organization of nursing care, and the types of nursing interventions vary by institution. Structuring nurse staffing (e.g., availability of nurses, organizational models of nursing care) and care interventions to meet “safe thresholds” could be considered a patient safety practice. However, no studies have evaluated thresholds explicitly.’ (p. 424.)

Many are concerned with the capacity of registered nurses to maintain patient safety. The registered nurse role encompasses both surveillance and care for early identification and intervention of complications and problems in care. As Aiken <sup>2</sup> has reports ‘as the registered nurse shortage continues, with burdensome nurse workloads, high turnover, and many unfilled hospital positions, concern is growing about the ability of nurses to fill the role effectively’.

In 2000, the American Nurses Association <sup>3</sup> reported that health care containment costs were affecting hospitals in three ways. First, patients have a higher acuity throughout their inpatient stay compared to previous years and require more intense nursing care. Second, the number of patients cared for by the nursing workforce (i.e., registered nurses (RNs), licensed practical nurses (LPNs), and certified nurse assistants or nurse assistants (CNA/ NAs) has increased in many settings. Third, the education and training requirements of many nurses in clinical settings is not sufficient. Since this time, staffing issues facing the profession have grown more complex as a result of numerous issues such as the shortage of registered nurses. There is concern as to whether the increased acuity of patients, the increased workload, the declining levels of training among nursing staff, and the nursing workforce shortage threatens the quality of care in acute care settings.



## **Table 1. The Nurse Workforce and Nurse Staffing Levels**

**The nurse workforce consists of licensed registered nurses (RNs), licensed practical nurses (LPNs), and nurses aides (NAs). Both RNs and LPNs are licensed by the State of Hawaii. RNs assess patient needs, develop patient care plans, and administer medications and treatments; LPNs carry out specified nursing duties under the direction of RNs. Nurses' aides typically carry out non-specialized duties and personal care activities. RNs, LPNs, and nurses' aides all provide direct patient care.**

**RNs have obtained their education through three different routes: 3-year diploma programs, 2-year associate degree programs, and 4-year baccalaureate degree programs. Almost a third of all RNs have a baccalaureate degree, and 7.6 percent of hospital nurses have advanced practice credentials (either a master's or doctoral degree). LPNs receive 12-18-month training programs that emphasize technical nursing tasks. Nurses' aides are not licensed but many acquire certified nurse aide or nursing assistant (CNA) status after proving they have certain skills related to the requirements of particular positions.**

A number of states across the country have engaged in dialogue concerning the implementation of nurse-patient ratios. In 1999, the California State Legislature passed Assembly Bill 394 and became the first state in the nation to establish minimum nurse-patient ratios. Thus, limiting the number of patients that a registered nurse (RNs) or licensed practical nurse (LPN) may care for at any one time. That legislation, AB 394, charged the California Department of Health Services (CDHS) with determining those staffing standards. The CDHS regulations implementing the new ratios requirements went into effect in January, 2004. The bill's proponents cited a growing body of research linking nurse staffing levels and positive patient care outcomes.

However, the quality of the research evidence concerning the impact of nurse staffing levels on patient outcomes requires rigorous evaluation to inform policy. Thus, the primary purpose of this paper is to identify and discuss the quality of evidence concerning effects of nurse staffing on patient outcomes and determine whether the literature supports setting specific nurse-patient ratios in acute care hospitals. The paper will also identify work related to staffing levels and quality in nursing homes. Three systematic reviews and other supporting evidence will be used to appraise the evidence concerning nurse staffing levels and patient outcomes primarily in acute care and secondarily in nursing homes.

### ***Measuring Staff Levels and Patient Outcomes***

The challenge faced in attempting to synthesize information, and establishing what the evidence is concerning staff levels and impact on patient safety, is the lack of standardization in definition

and measurement of constructs such as ‘nurse staffing levels’. This lack of consistency creates major limitations when attempting to compare variables across studies. As shown in Table 3 studies can use a variety of variables to measure nurse staffing. Of these measures, many investigators choose to examine the *structural elements of nursing care*.<sup>1,4-7</sup> However, a variety of different concepts can be used to represent this construct including number of nurses, number of nurse hours, percentage or ratios of nurses to patients, skill mix, organization of nursing care delivery or organizational culture, nurse workload, nurse stress, or qualification of nurses.

**Table 2. Measures of Nurse Staffing**

<b>Nurse Staffing Measure</b>	<b>Definition</b>
Nurse to patient ratio	Number of patients cared for by one nurse typically specified by job category (RN, LPN); this varies by shift and nursing unit; some researchers use this term to mean nurse hours per inpatient day
Total nursing staff or hours per patient day	All staff or all hours of care including RN, LPN, aides counted per patient day (a patient day is the number of days any one patient stays in hospital, ie., one patient staying 10 days would be 10 patient days)
RN or LPN FTEs per patient day	RN or LPN full time equivalents per patient day (FTE is 2080 hours per year and can be composed of multiple part-time or one full-time individual)
Nursing skill (or staff) mix	The proportion or percentage of hours of care provided by one category of caregiver divided by the total hours of care (e.g., a 60% RN skill mix indicates that RNs provide 60% of the total hours of care)
Proportion of hospital staff RNs with higher levels of education	The percentage of RNs with a bachelor’s, master’s or another degree compared to percentage of RNs holding diploma or associate degrees.

Other, less frequently used constructs are the *intervention or process measures of care* including studies based on the ‘science of nursing’ or ‘nurses as the intervention’. For the purposes of this paper the intervention or process measures of care will not be discussed in this paper.

## **Systematic Reviews**

Healthcare providers, consumers, researchers, and policy makers are inundated with unmanageable amounts of information. We need systematic reviews to efficiently integrate valid information and provide a basis for rational decision making.<sup>8</sup> Systematic reviews establish where the effects of healthcare are consistent and where they may vary significantly. Systematic reviews are valuable in informing policy and decision making. They are useful where there is uncertainty regarding the potential benefits or harm of an intervention and when there are variations in practice. By locating and synthesizing evidence from primary studies, systematic reviews provide empirical answers to focused questions.

### **Systematic Reviews versus Traditional Reviews**

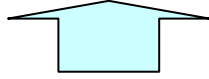
Systematic reviews differ from other types of review in that they adhere to a strict scientific design in order to make them more comprehensive, to minimize the chance of bias, and so ensure their reliability. They use a replicable, scientific and transparent approach which seeks to minimize bias. Rather than reflecting the views of the authors or being based on only a (possibly biased) selection of the published literature, they contain a comprehensive summary of the available evidence. The techniques used to ensure the reliability of the review results will vary according to whether the review is quantitative or qualitative. However, the techniques are comparable and serve to define the systematic review genre, regardless of whether it is intended to be qualitative or quantitative. All systematic reviews will include some qualitative elements. However, not all systematic reviews contain statistical analysis or synthesis.

### **The Hierarchy of Evidence**

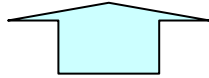
A simple assessment of the appropriateness of a study design is often used to guarantee a minimum level of quality. Study designs that are included in a review should be clearly stated in the inclusion/exclusion criteria in the protocol of the systematic review. As shown in Table 1 the quality threshold of primary studies can be determined by generating a hierarchy of study designs and setting a cut-off level for study selection. This hierarchy of study designs in Table 1 will be cited in tables of evidence used throughout this paper.

**Table 3. Hierarchy of study designs\***

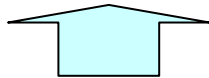
**Level 1.** Randomized controlled trials – includes quasi-randomized processes such as alternate allocation.



**Level 2.** Non-randomized controlled trial – a prospective (pre-planned) study, with predetermined eligibility criteria and outcome measures.



**Level 3.** Observational studies with controls – includes retrospective, interrupted time series (a change in trend attributable to the intervention), case-control studies, cohort studies with controls, and health services research that includes adjustment for likely confounding variables.



**Level 4.** Observational studies without controls (e.g., cohort studies without controls and case series).

\* Systematic reviews and meta-analyses are assigned to the highest level study design included in the review, followed by an “A” (e.g., a systematic review that includes at least one randomized controlled trial was designated “Level 1A”)

**Table 4. The Hierarchy of outcome measures**

Level 1. Clinical outcomes - morbidity, mortality, adverse events.

Level 2. Surrogate (proxy) outcomes - observed errors, intermediate outcomes (eg, laboratory results) with well-established connections to the clinical outcomes of interest (usually adverse events).

Level 3. Other measurable variables with an indirect or un-established connection to the target safety outcome (e.g., pre-test/post-test after an educational intervention, operator self-reports in different experimental situations).

Level 4. No outcomes relevant to decreasing medical errors and/or adverse events (e.g., study with patient satisfaction as only measured outcome; article describes an approach to detecting errors but reports no measured outcomes).

## **II. Acute Care Settings**

### ***Nurse Staffing and Patient Outcomes in Acute Care***

Three systematic reviews were identified that examine nurse staffing and patient outcomes. The three systematic reviews include the Institute of Medicine's <sup>1</sup> report 'To Err is Human: Building a Safer Health System' published in 2000, Lang et al. <sup>9</sup> 2004 'Systematic review on the effects of nurse staffing on patient, nurse employee, and hospital outcomes', and the latest systematic review authored by Lankshear et al. <sup>10</sup> 2005 titled 'Nurse staffing and healthcare outcomes a systematic review of the international research evidence'.

### ***Nurse Staffing Levels***

As shown in Table 5, most studies tend to be correlational in nature. Although there is a paucity of evidence that tends to suggest that nurse staffing is negatively associated with unplanned hospital readmission and failure to rescue. <sup>117,119-121</sup> There remains no substantive evidence supporting a cause and effect relationship between these measures based on the correlational nature of the studies. This is also true for evidence that suggests that nurse staffing is negatively associated with increased length of stay, nosocomial infection (urinary tract infection, postoperative infection, and pneumonia), and pressure ulcers. <sup>122-125</sup>

Study results are inconsistent as to whether higher nurse staffing levels have a positive effect on patient outcomes. Although six <sup>30,89,118,120,129</sup> of the seventeen studies in Table 5 reported no association between richer nurse staffing and positive patient outcomes, the other 11 that report an association tend to be more recent, with larger samples and more sophisticated methods for accounting for confounders. However, these studies examined a variety of different types and acuties of patients which may not be representative of other patient populations. Within some patient groups such as common surgical patients there appears to be some correlational evidence that nurse staffing is associated with patient outcomes. None of the studies specifically identify the ratios or hours of care that produce the best outcomes for different groups of patients or different nursing units

**Table 5 Structural Measures (adapted from Seago, 2000)**

Study Setting	Study design; Outcomes	Availability of Nurse	Effect Size (coefficient, mean difference, OR*)
1. Case control study in one tertiary teaching hospital in St Louis, Missouri in 2002.	Level 3; Level 1	Patient to nurse ratio obtained from nurse staffing records ( $\leq 3$ ; 4-6; $\geq 7$ )	Multivariate model with patient related factors for falling included increasing patient to nurse ration (OR 1.6% CI: 1.2-2.0)
1. Cross sectional data were collected on 232,342 surgical patients (general, orthopedic, and vascular surgery) discharged from 168 general hospitals in Pennsylvania between April 1998 – November 1999 <sup>11,12</sup>	Level 3; Level 1&3	50% of hospitals had nurse-patient ratio that was 1:5 or lower; 39.6% nurses had BSN or higher	Controlling for patient and hospital characteristics nurse to patient ratio was significantly associated with 30-day mortality (OR 1.07, 95% CI: 1.03-1.12, $p < 0.001$ ) and failure to rescue (OR 1.07, 95% CI: 1.02-1.11, $p < 0.001$ ).
2. Prospective data collected from 1,205 consecutively admitted AIDS patients in 40 units in 20 acute care hospitals. 820 (86%) RNs & LPNs were also surveyed. Hospitals from 11 US states participated <sup>13</sup>	Level 3; Level 1&3	0.8 mean nurses/ patient day with a range of (0.5-1.5) nurses/ patient day	RN/LPN Nurse to patient ratio was significantly associated with 30-day mortality (OR 0.46, 95% CI: 0.22-0.98, $p < 0.01$ ). An additional nurse per patient day reduced the odds of dying by one-half.
3. All SICU patients who developed a central venous catheter bloodstream infection during an infection outbreak period (January 1992 through September 1993) and randomly selected controls. Cohort study: all SICU patients during the study period (January 1991 through September 1993) <sup>14</sup>	Level 3; Level 1	1.2 patient/ nurse and 20 nursing hours per patient day (HPPD)  1.5 patient/ nurse and 16 nursing HPPD  2 patient/ nurse and 12 nursing HPPD	There was a significant relationship between nurse to patient ratios and nursing hours and central venous catheter bloodstream infection in the SICU. For 1.2 patient/ nurse and 20 HPPD the adjusted odds ratio was 3.95 (95% CI: 1.07-14.54). 1.5 patient/ nurse and 16 nursing HPPD, 15.6 (95% CI: 1.15-211.4), and for 2 patients/ nurse and 12 HPPD, 61.5 (95% CI: 1.23-3074).
4. Cross sectional data from 39 nursing units in 11 hospitals for 10 quarters of data between July, 1993 and December, 1995 in the US <sup>15</sup>	Level 3; Level 1&2	Proportion of direct care RN hours; total direct care hours;  Up to 87.5% RN skill mix	With patient acuity controlled, direct care RN proportion of hours was inversely associated with medication errors (-0.525, $p < 0.05$ ) and decubiti (-0.485, $p < 0.05$ ). Total direct care hours was positively associated with mortality (0.491, $p < 0.05$ ). A curvilinear relationship was found so that as RN proportion increased, rates of all adverse events decreased up to a proportion of 88% RNs. Above that level, as RN proportion increased, the adverse outcomes increased.

5. 42 inpatient units in one 880-bed hospital in the US <sup>16</sup>	Level 3; Level 1&2	8.63 mean total hours of care;  69% RN skill mix; Up to 85% skill mix	With patient acuity controlled, direct care RN proportion of hours was inversely associated with medication errors/doses (-0.576, p<0.05) and falls (-0.456, p<0.05). Total direct care hours was positively associated with medication errors/doses (0.497, p<0.05). A curvilinear relationship was found so that as RN proportion increased, medication error rates decreased up to a proportion of 85% RNs. Above that level, as RN proportion increased, the medication error increased.
6. Cross sectional data from hospital cost disclosure reports and patient discharge abstracts from acute care hospitals in California and New York for fiscal years 1992 and 1994 <sup>17</sup>	Level 3; Level 1&2	7.56-8.43 mean total hours of care/ nursing intensity weight (NIW); 67.7% to 70.5% RN skill mix	Total hours/NIW was inversely associated with pressure ulcer rates (-15.59, p<0.01). RN hours in California, but not New York, was inversely associated with pneumonia (-0.39, p<0.01).
7. Cross sectional data from hospital cost disclosure reports, patient discharge abstracts and Medicare data from acute care hospitals in Arizona, California, Florida, Massachusetts, New York, and Virginia for 1996 <sup>18</sup>	Level 3; Level 1&2	5.76 mean licensed hours of care/83.3% RN skill mix	Skill mix was inversely associated with pneumonia (-0.20, p<0.01), postoperative infection (-0.38, p<0.01), pressure ulcers (-0.47, p<0.01), and urinary tract infections (-0.61, p<0.01).
8. Cross sectional data from hospital cost disclosure reports, patient discharge abstracts from acute care hospitals in California, Massachusetts, and New York for 1992 and 1994 <sup>19</sup>	Level 3; Level 1&2	7.67-8.43 mean total hours of care; 67.7-70.5% skill mix	RN hours were inversely associated with pneumonia (-0.39, p<0.01), pressure ulcer rates (-1.23, p<0.01), and postoperative infection (-0.47, p<0.01).
9. Cross sectional data from HCFA Medicare Hospital Mortality Information 1986 and the American Hospital Association 1986 annual survey of hospitals <sup>20</sup>	Level 3; Level 1	0.9 mean RN/ADC (average daily census); 60% skill mix	Controlling for hospital characteristics, proportion of RNs/all nursing staff was significantly associated to adjusted 30-day mortality rate (adjusted difference between lower and upper fourth of hospitals -2.5, 95% CI: -4.0 to -0.9).
10. Cross sectional data from the American Hospital Association 1986 annual survey of hospitals and medical record reviews from July 1987 to June 1988 in 6 large PPOs <sup>21</sup>	Level 3; Level 3	52.2 (Texas) – 67.6% (California) skill mix	Controlling for hospital characteristics, proportion of RNs/ all nursing staff was significantly related to lower problem rates (California lower rates 3.58, upper rates 2.30 p<0.0001)
11. Cross sectional data from the American Hospital Association Annual Survey of	Level 3; Level 1	67.8% mean skill mix	Proportion of RN FTE/ all nursing FTEs was inversely related to thrombosis after major surgery

Hospitals for 1993 and the Nationwide Inpatient Sample from the Agency for Health Care Policy and Research for 1993 (HCUP) <sup>22</sup>			(beta -33.22, 95% CI: -57.76 to -8.687), urinary tract infection after surgery (beta -159.41 to -421.15), and pneumonia after major surgery (beta -159.41, 95% CI: -252.67 to -66.16).
12. Cross sectional data were collected from March 1 to June 7, 1986 and included 497 patients <sup>23</sup>	Level 3; Level 2	Adequate staffing	The adequately staffed unit had fewer complications than the inadequately staffed unit.
13. 390 patients admitted within 1 week after stroke onset in 9 acute care hospitals in The Netherlands. Surviving patients were interviewed 6 months post stroke and asked about falls. Fall and other patient data were collected from medical records. Ward characteristics were provided by senior nurses. Complete data on 340 patients <sup>24</sup>	Level 3; Level 2	0.04 mean difference in nurse to patient ratios	No significant differences in falls between case and control groups in number of nurses or nurse ratios on any shift.
14. Cross sectional data for 17,440 patients across 42 ICUs in the US <sup>25</sup>	Level 3; Level 1-3	Mean 0.66 patient/nurse with a range of 0.31-1.31	Neither nurse to patient ratio nor caregiver interaction was found to be significantly associated with risk-adjusted mortality.
15. Cross sectional data were collected from April, 1994-March, 1995 from 23 trusts (groups of hospitals) in Scotland <sup>26</sup>	Level 3; Level 1	Mean RN FTE was 1.21 per patient	There was no association between RN FTE per occupied hospital bed and mortality
16. Cross sectional data were collected from the American Hospital Association Annual survey of Hospitals in 1989-1991, the observed and predicted 30-day post-admission mortality for patients with a primary diagnosis of COPD from the HCFA Hospital Information Reports from 1989-1991 and the Medicare Case Mix Index <sup>27</sup>	Level 3; Level 1	RN FTE/ 100 adjusted admissions	No association between RN FTE/100 adjusted admissions and 30-day post-admission mortality for patients with COPD
17. Cross sectional data from staffing and accounting records of 60 community hospitals across the US in 1985, hospital and nursing unit surveys, 1981 case mix indexes from the Federal Register, and the Health Area Resources File <sup>28</sup>	Level 3; Level 3	52% RN skill mix; 33% LPN mean nursing HPPD was 4.93	No significant associations between staffing variables, medication errors, patient injuries, IV administration errors, and treatment errors.

\*OR=odds ratio



## ***Associations between Staffing and Patient Outcomes***

### **Failure to rescue**

The incidence of failure to rescue (death within 30 days among patients who experienced complications) was lower among surgical, but not medical, patients at higher levels of RN hours per day and higher total nursing hours per day<sup>13,29</sup> and at lower patient loads per nurse.<sup>12</sup> Aiken et al.<sup>11,12</sup> reporting two different analyses conducted on the same Pennsylvania data identified that lower post surgical patient mortality was associated with a) lower patient-to-registered nurse ratios and b) a higher proportion of BS and MS prepared RNs.

Tourangeau et al.<sup>30</sup> after adjusting for case mix and patient care need found that a richer skill mix of RNs was associated with lower 30-day mortality for surgical patients whereas the total amount of nursing staff was not related. The evidence, although equivocal, supports a potential inverse association between nurse staffing and failure to rescue among surgical patients (Table 6). However, longitudinal evidence is required to support these findings in surgical patients.

### **In-patient mortality**

In a longitudinal study, Mark et al.<sup>31</sup> analyzed data collected from 422 hospitals (in 11 US states) and found that an increase in RN staffing levels was associated with reduced rates of mortality. Manheim et al.,<sup>32</sup> after adjusting for case mix, found that more RNs per admission and a richer skill mix were each associated with lower mortality rates in 3,796 hospitals in 1992. Hartz et al.<sup>20</sup> also reported that more RNs and a stronger RN skill mix were associated with lower mortality among 3,100 hospitals. Krakauer et al.<sup>33</sup> compared 2 predictive models constructed from different data sets. Both models supported a relationship between a richer RN skill mix and lower inpatient mortality. Aiken et al.<sup>34</sup> found similar relationships in 22 Magnet hospitals but not in a control group of 314 nonfederal hospitals. Finally, in recent analyses, Aiken et al.<sup>11,12</sup> found that better RN staffing was associated with improved mortality in surgical patients. (These studies analyze the same Pennsylvania data.) Bond et al.<sup>35</sup> found, in examination of 3,763 hospitals, weak significant relationships between the proportion of RNs per occupied bed and mortality rates among Medicare patients, adjusted for severity. Needleman et al.<sup>29</sup> reported no association in medical or surgical patients, and Robertson and Hassan,<sup>27</sup> analyzing 1989 to 1991 data, found no association between the proportion of RNs, LPNs, or NAs and 30-day post admission mortality from chronic obstructive pulmonary disease. The evidence remains inconclusive. Standardized nurse staffing measures and longitudinal evidence are required to support these findings (Table 6).

## **Pneumonia**

The evidence between skill mix and pneumonia reported by 3 key studies is mixed: the American Nurses Association (ANA) <sup>17,18,36</sup> study found a relationship for California hospitals in 1992 and 1994 but not for New York hospitals for the same year, and Needleman et al. <sup>29</sup> found a relationship for both medical and surgical units. Mark et al. <sup>31</sup> reported an inverse relationship between RN staffing levels and pneumonia. Kovner and Gergen <sup>22</sup> found an inverse relationship between the number of RNs per patient day and pneumonia in patients after surgery but not after invasive vascular procedures. However, three studies by Cho et al., <sup>37</sup> Kovner et al., <sup>38</sup> and Unruh <sup>39</sup> did not find this relationship. Thus, the evidence remains unclear whether a significant inverse relationship exists between nurse staffing and pneumonia rates among medical–surgical patients (Table 6).

## **Urinary tract infections**

The ANA study <sup>18</sup> found a relationship between nurse staffing and urinary tract infection (UTI) rates in California hospitals for both 1992 and 1994 and for New York hospitals only in 1994. Needleman et al. <sup>29</sup> reported a relationship in medical patients but not in surgical patients. Mark et al. <sup>31</sup> found an inverse relationship between RN staffing levels and incidence of urinary tract infections. Sovie et al. <sup>40</sup> found that total nursing hours per patient day was associated with a decrease in UTI rates among medical students. This finding was present only in 1998 data, however, not in 1997 data, and the clinical importance of the effect could not be assessed as a result of discrepant data. Kovner and Gergen <sup>22</sup> found that a higher number of RN full-time equivalents (RN FTEs) per patient day was statistically associated with lower rates, but the clinical importance of the lower rates was marginal. Recent studies report no relationship: Cho et al. <sup>37</sup> found no relationship between UTI rates and total nursing staffing, total RN hours, and percent of RN staffing, and Kovner et al. <sup>38</sup> found no association between UTI rates and RN hours per severity adjusted patient day or LPN hours per severity-adjusted patient day. There are mixed findings concerning the relationship between UTI rates and nurse staffing (Table 6).

## **Pressure ulcers**

The 1997 ANA report found that richer skill mixes were associated with lower rates of pressure ulcers in California and New York hospitals in 1992 and 1994. <sup>36</sup> Total nursing hours were associated with lower rates of ulcers in New York in 1992 but not in 1994, and in California in 1994 but not in 1992. Mark et al. <sup>31</sup> found inverse relationships between rates of pressure ulcers and RN staffing levels. Blegen et al. <sup>15,16</sup> also found that a higher skill mix, up to 87.5% RN, was associated with lower rates in forty-two nursing units from one hospital. Needleman et al. <sup>29</sup> reported no association. Most findings from the five studies using this endpoint show no association. Whitman et al. <sup>41</sup>

examined staffing and patient outcomes in 95 patient care units across 10 hospitals in the Eastern US and found no significant relationships between staffing and rate of pressure ulcers. In 2005, Donaldson et al.<sup>42</sup> reported on the first analysis of the impact of mandated minimum staffing ratios in a convenience sample of 68 acute hospitals in California. The data indicated that assessment of the impacts of the mandated ratios on the prevalence of decubiti did not reveal significant changes. The evidence is inconsistent and is not strong enough to support a relationship between nurse staffing and the incidence of pressure ulcers (Table 6).

### **Falls**

Donaldson et al.<sup>42</sup> reporting on the mandated minimum staffing ratios in California found there was no significant impact on the incidence of patient falls. A case-control study of patient, education, and care-related risk factors for inpatient falls took place in one tertiary teaching hospital in St Louis, Missouri in 2002. The study examined 6 predictors of inpatient falls using multivariate analysis and found patient-to-nurse ratio as significantly associated (OR 1.6% CI: 1.2-2.0) with fall rates. However, the significance of effect was not reported. Dunton et al. 2004<sup>43</sup> using 2002 data from 1,751 hospital units in the National Database of Nursing Quality Indicators found that percent of registered nurse hours had a significant inverse association with fall rates for step-down ( $p < 0.01$ ) and medical units ( $p < 0.05$ ), but not for surgical and combined medical-surgical units. However, it is unclear whether these findings are clinically significant. The paucity of evidence concerning impact of staffing levels on fall rates is equivocal and further research is required.

### **Other patient outcomes**

Other than the single report by Needleman et al.<sup>29</sup> of a significant relationship between lower staffing and shock in medical patients, the evidence indicates that associations between nurse staffing and other patient outcomes studied are unclear (Table 6).

**Table 6. Clinical and Statistical Significance of Findings from Studies on the Effects of Nurse Staffing on Patient Outcomes (adapted from Lang et al. 2004 <sup>9</sup>, pp. 330-331)**

Outcome	Effect Size Judged to Be Unimportant		Importance of Effect Size Uncertain		Effect Size Judged to Be Important	
	NS	P<0.05	NS	P<0.05	NS	P<0.05
<b>1. Failure to Rescue</b>	Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>*29,44</sup> Silber, 1995 <sup>45</sup>					Aiken, 2002 <sup>‡,∞12</sup> Needleman, 2001 <sup>‡,29,44</sup> Needleman, 2001 <sup>‡</sup> Aiken, 1999 <sup>‡13</sup> Tourangeau, 2002 <sup>30</sup>
<b>2. In-patient Mortality</b>	Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>‡29,44</sup> Needleman, 2001 <sup>‡29,44</sup> Robertson, 1999 <sup>27</sup> Robertson, 1999 <sup>27</sup> Robertson, 1999 <sup>27</sup> Silber, 1995 <sup>45</sup> Bradbury, 1994 <sup>46</sup> Bradbury, 1994 <sup>46</sup> Shortell, 1988 <sup>47</sup>	Aiken, 2000 <sup>34</sup> Bond, 1999 <sup>35</sup> Bond, 1999 <sup>35</sup>		(Silber, 1995) <sup>45</sup>	(Blegen, 1998A) <sup>16</sup> (Blegen, 1998A) <sup>16</sup> Blegen, 1998A <sup>16</sup> Bradbury, 1994 <sup>46</sup> Manheim, 1992 <sup>32</sup>	Mark, 2004 <sup>31</sup> Aiken, 2002 <sup>‡,∞12</sup> Aiken, 2000 <sup>34</sup> Manheim, 1992 <sup>32</sup> Krakauer, 1992 <sup>33</sup> Krakauer, 1992 <sup>33</sup> Hartz, 1989 <sup>20</sup> Hartz, 1989 <sup>20</sup> Hartz, 1989 <sup>20</sup>
<b>3. Pneumonia</b>	Cho, 2003 <sup>37</sup> Unruh, 2003 <sup>39</sup> Unruh, 2003 <sup>39</sup> Kovner, 2002 <sup>38</sup> ANA, 2000 <sup>‡18</sup> ANA, 2000 <sup>‡18</sup> Kovner, 1998 <sup>22</sup>	Kovner, 2002 <sup>38</sup> Kovner, 1998 <sup>22</sup>		Cho, 2003 <sup>37</sup> Cho, 2003 <sup>37</sup>		Mark, 2004 <sup>31</sup> Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>‡29,44</sup> Needleman, 2001 <sup>‡29,44</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> Kovner, 1998 <sup>22</sup>
<b>4. Urinary Tract Infections</b>	Unruh, 2003 <sup>39</sup> Unruh, 2003 <sup>39</sup> Cho, 2003 <sup>37</sup> Cho, 2003 <sup>37</sup> Cho, 2003 <sup>37</sup> Kovner, 2002 <sup>38</sup> (Kovner, 2002) <sup>38</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> ANA, 2000 <sup>18</sup>	Needleman, 2001 <sup>‡29,44</sup> Kovner, 1998 <sup>22</sup>		Sovie, 2000 <sup>40</sup> Needleman, 2001 <sup>‡29,44</sup> Kovner, 1998 <sup>22</sup>		Mark, 2004 <sup>31</sup> Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>*29,44</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup>
<b>5. Pressure Ulcers</b>	Donaldson, 2005 <sup>42</sup> Cho, 2003 <sup>37</sup> Cho, 2003 <sup>37</sup> Whitman, 2002 <sup>41</sup> Needleman, 2001 <sup>29,44</sup> Needleman, 2001 <sup>29,44</sup> Needleman, 2001 <sup>29,44</sup> Needleman, 2001 <sup>29,44</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> Sovie, 2000 <sup>40</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> (Blegen, 1998A) <sup>16</sup>	(Cho, 2003) <sup>37</sup>		Unruh, 2003 <sup>39</sup> Unruh, 2003 <sup>39</sup> Sovie, 2000 <sup>40</sup>	(Blegen, 1998A) <sup>16</sup>	Mark, 2004 <sup>31</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> ANA, 2000 <sup>18</sup> Blegen, 1998A <sup>16</sup>

Findings in parentheses indicate worse outcomes with better nurse staffing.

Findings in bold are from the 12 key studies.

NS, not statistically significant at the .05 level;

\*Medical patients.

†Surgical patients.

ANA, American Nurses Association.

‡AIDS patients.

‡New York hospitals.

§California hospitals.

∞ Pennsylvania hospitals.

**Table 6. Clinical and Statistical Significance of Findings from Studies on the Effects of Nurse Staffing on Patient Outcomes (Continued) (adapted from Lang et al. 2004<sup>9</sup>, pp. 330-331)**

Outcome	Effect Size Judged to Be Unimportant		Importance of Effect Size Uncertain		Effect Size Judged to Be Important	
	NS	P<0.05	NS	P<0.05	NS	P<0.05
<b>6. Falls</b>	<b>Donaldson, 2005</b> <sup>42</sup> Dunton, 2004 <sup>†43</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> Arbesman, 1999 <sup>48</sup> Taunton, 1994 <sup>49</sup> Ceria, 1992 <sup>50</sup> Blegen, 1989A <sup>16</sup> Blegen, 1989A <sup>16</sup> (Blegen, 1989A) <sup>16</sup> Blegen, 1989B <sup>15</sup> Wan, 1987 <sup>28</sup> Wan, 1987 <sup>28</sup> Kustaborder, 1983 <sup>51</sup> Kustaborder, 1983 <sup>51</sup>			Krauss, 2005 <sup>52</sup> Dunton, 2004 <sup>‡43</sup> <b>Unruh, 2003</b> <sup>39</sup> (Unruh, 2003) <sup>39</sup> <b>Sovie, 2000</b> <sup>40</sup> <b>Sovie, 2000</b> <sup>40</sup>	<b>Sovie, 2000</b> <sup>40</sup> <b>Sovie, 2000</b> <sup>40</sup>	Krauss, 2005 <sup>52</sup> (Grillo-Peck, 1995) <sup>53</sup> Blegen, 1989B <sup>15</sup>
<b>7. Nosocomial Infections</b>	<b>Unruh, 2003</b> <sup>39</sup> <b>Unruh, 2003</b> <sup>39</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> <b>Cho, 2003</b> <sup>37</sup> Whitman, 2002 <sup>41</sup> <b>ANA, 2000</b> <sup>‡18</sup> (Blegen, 1998A) <sup>16</sup> Blegen, 1998A <sup>16</sup> (Grillo-Peck, 1995) <sup>53</sup> Shukla, 1983 <sup>54</sup>	Taunton, 1994 <sup>49</sup>				<b>ANA, 2000</b> <sup>‡18</sup> ANA, 2000 <sup>‡18</sup> Haley, 1982 <sup>55</sup>
<b>8. Treatment Errors</b>	Blegen, 1998B <sup>15</sup> (Blegen, 1998A) <sup>16</sup> (Blegen, 1998B) <sup>15</sup> Grillo-Peck, 1995 <sup>53</sup> Grillo-Peck, 1995 <sup>53</sup> Taunton, 1994 <sup>49</sup> Taunton, 1994 <sup>49</sup> Wan, 1987 <sup>28</sup> Wan, 1987 <sup>28</sup> Wan, 1987 <sup>28</sup> Wan, 1987 <sup>28</sup>	Blegen, 1998B <sup>15</sup> (Blegen, 1998A) <sup>16</sup> (Blegen, 1998B) <sup>15</sup> (Blegen, 1998B) <sup>15</sup>		Blegen, 1998A <sup>16</sup>		(Blegen, 1998B) <sup>15</sup>
<b>9. Patient Satisfaction</b>	Blegen, 1998A <sup>16</sup> (Blegen, 1998A) <sup>16</sup> Bostrom, 1993 <sup>56</sup> Shukla, 1983 <sup>54</sup> Shukla, 1983 <sup>54</sup> Shukla, 1983 <sup>54</sup> Hinshaw, 1981 <sup>57</sup> Hinshaw, 1981 <sup>57</sup>	<b>Sovie, 2000</b> <sup>40</sup> <b>Sovie, 2000</b> <sup>40</sup> Hinshaw, 1981 <sup>57</sup> Hinshaw, 1981 <sup>57</sup> Hinshaw, 1981 <sup>57</sup>		Seago, 2006 <sup>58</sup>		(Shukla, 1983) <sup>54</sup>
<b>10. Unspecified Complications</b>	<b>Kovner, 1998</b> <sup>22</sup> Flood, 1988 <sup>23</sup>	(Silber, 1995) <sup>45</sup>			Behner, 1990 <sup>59</sup> Flood, 1988 <sup>23</sup>	Behner, 1990 <sup>59</sup>
<b>11. Venous Thrombosis</b>	<b>Needleman, 2001</b> <sup>*29,44</sup> <b>Needleman, 2001</b> <sup>*29,44</sup> <b>Needleman, 2001</b> <sup>†29,44</sup> <b>Needleman, 2001</b> <sup>†29,44</sup> <b>Kovner, 1998</b> <sup>22</sup> <b>Kovner, 2002</b> <sup>38</sup> (Kovner, 2002) <sup>38</sup>			<b>Kovner, 1998</b> <sup>22</sup> <b>Kovner, 1998</b> <sup>22</sup>		

Findings in parentheses indicate worse outcomes with better nurse staffing.

Findings in bold are from the 12 key studies.

NS, not statistically significant at the .05 level;

\*Medical patients.

†Surgical patients.

ANA, American Nurses Association.

‡AIDS patients.

‡New York hospitals.

§California hospitals.

°Pennsylvania hospitals.

**Table 6. Clinical and Statistical Significance of Findings from Studies on the Effects of Nurse Staffing on Patient Outcomes (Continued) (adapted from Lang et al. 2004<sup>9</sup>, pp. 330-331)**

Outcome	Effect Size Judged to Be Unimportant		Importance of Effect Size Uncertain		Effect Size Judged to Be Important	
	NS	P<0.05	NS	P<0.05	NS	P<0.05
<b>12. Pulmonary Compromise</b>	Unruh, 2003 <sup>39</sup> Kovner, 2002 <sup>38</sup> Kovner, 2002 <sup>38</sup> Needleman, 2001 <sup>29,44</sup> Needleman, 2001 <sup>29,44</sup>	Unruh, 2003 <sup>39</sup> Kovner, 1998 <sup>22</sup>				
<b>13. Gastrohemorrhage</b>	Needleman, 2001 <sup>‡,29,44</sup> Needleman, 2001 <sup>‡,29,44</sup> Kovner, 1998 <sup>22</sup>	Needleman, 2001 <sup>*29,44</sup>				Needleman, 2001 <sup>*29,44</sup>
<b>14. Shock</b>	Needleman, 2001 <sup>‡,29,44</sup> Needleman, 2001 <sup>‡,29,44</sup>					Needleman, 2001 <sup>*29,44</sup> Needleman, 2001 <sup>*29,44</sup>
<b>15. Morbidity</b>	Bradbury, 1994 <sup>46</sup> Bradbury, 1994 <sup>46</sup>		Bradbury, 1994 <sup>46</sup>			
<b>16. Adverse Drug Events</b>	Cho, 2003 <sup>37</sup> Cho, 2003 <sup>37</sup> Cho, 2003 <sup>37</sup>					
<b>17. Intravenous Errors</b>	Wan, 1987 <sup>28</sup> Wan, 1987 <sup>28</sup>					
<b>18. Cardiac Arrests</b>	Kovner, 1998 <sup>22</sup> Blegen, 1998B <sup>15</sup> Blegen, 1998B <sup>15</sup>					
<b>19. Patient Injuries</b>	(Wan, 1987) <sup>28</sup> (Wan, 1987) <sup>28</sup>					

Findings in parentheses indicate worse outcomes with better nurse staffing.

Findings in bold are from the 12 key studies.

NS, not statistically significant at the .05 level;

\*Medical patients.

†Surgical patients.

‡New York hospitals.

§California hospitals.

ANA, American Nurses Association.

‡AIDS patients.

°Pennsylvania hospitals.

### **III. Nursing Homes**

#### ***Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes***

The Centers for Medicare & Medicaid Services (CMS) mandates certain nurse staffing requirements under the statutory authority of The Omnibus Budget Reconciliation Act of 1987 (OBRA '87). The general requirement is that nursing homes must provide “...*sufficient nursing staff to attain or maintain the highest practicable ... well-being of each resident...*” Many healthcare professionals argue this requirement, when implemented in practice, is too vague to serve as an adequate Federal standard. There are also specific 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 minimum standard for a 60 bed facility or a 600 bed facility), many professionals also agree this requirement as inadequate; they argue for a required minimum nurse staffing to resident *ratio*.

The evidence concerning nurse staffing and quality in nursing homes is minimal when compared to that found examining nurse staffing and quality outcomes in acute care settings. However correlational studies have revealed associations between nurse staffing (particularly RNs) and a number of resident outcomes. The types of outcomes examined include lower death rates, higher rates of discharges to home, improved functional outcomes; fewer pressure ulcers, fewer urinary tract infections, lower urinary catheter use, and less antibiotic use.<sup>60-68</sup>

Inadequate nurse staffing has been associated with inadequate feeding assistance during meals, poor skin care, lower activity participation, and less toileting assistance.<sup>67,69-71</sup> The results of these correlational studies led two Institute of Medicine committees to recommend higher nurse staffing in nursing facilities, including 24-hour registered nursing care.<sup>72,73</sup>

#### ***Institute of Medicine***

In 1996, the IOM report “*Nursing Staff in Hospitals and Nursing Homes: Is it Adequate?*”<sup>73</sup> concluded:

The preponderance of evidence, from a number of studies, using different types of quality measures, shows a positive relationship between nursing staff levels and quality of nursing home care, which in turn, indicates a strong need to increase the overall level of nursing staff in nursing homes. (p.153)<sup>73</sup>

The report, however, did not recommend appropriate levels of nursing staff, identifying that the

research literature did not define an optimal staffing level, nor how to account for varying circumstances among nursing homes, including differences in the types of care needed by individual facilities' residents (also referred to as "case-mix").<sup>73</sup>

The 2000 IOM report "*Improving the Quality of Long Term Care*"<sup>74</sup>, reiterated

The research evidence suggests that both nursing-to-resident staffing levels and the ratio of professional nurses to other nursing personnel are important predictors of high quality of care in nursing homes. The research literature, however, does not answer the question of what particular skill mix is optimal.<sup>73</sup> Nor does it take into account possible substitutions for nursing staff and ways to best organize all staff. Moreover, nurse staffing levels alone are a necessary, but not a sufficient, condition for positively affecting care in nursing homes. Training, supervision, environmental conditions, leadership and management, and organizational culture (or capacity) are essential elements in the provision of quality care to residents. Overall, there is a need for sufficient, well-trained, and motivated staff to provide consumer-centered care in nursing homes, as required in OBRA 87. (p.190)<sup>74</sup>

Few studies have specifically examined the association between staffing and the implementation of daily care processes and none of the correlational studies including the CMS study directly measured specific care processes that may be better implemented in higher staffed homes and could explain the effects on resident outcomes.

### ***Centers for Medicare & Medicaid Services***

The most notable study done to date, by the Centers for Medicare & Medicaid Services (CMS) published in 2001<sup>68</sup>, titled "*Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes*" examined relationships between nurse staffing and a number of resident outcomes during its two phase study.

#### **Phase I**

Phase I established that there are critical ratios of nurses to residents below which nursing home residents are significantly at risk of quality problems. These critical ratios exist for certified nurse aides, total licensed staff, and registered nurses. This conclusion was based on analyses that were specifically designed to identify critical nurse staffing ratio thresholds, evidence that was not provided in other analyses, including the Institute of Medicine's (IOM) studies published in 1996<sup>73</sup> and 2001.<sup>72</sup> The 2001 IOM report called for the federal government to develop minimum staffing



levels (that specify number and skill mix) for direct care that are based on case mix-adjusted standards. To develop these standards, the IOM recommended that the U.S. Department of Health and Human Services fund research to examine the actual time and staff mix required to provide adequate processes and outcomes of care consistent with the needs and variability of consumers in these settings.

CMS Phase I analyses indicated that to meet the staffing thresholds, staffing levels would have to be increased in a substantial portion of facilities. However, a major limitation of this 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. Thus, study limitations indicate the specific thresholds identified in Phase I were tentative.

## **Phase II**

The purpose of the CMS Phase II study<sup>68</sup> was to replicate the prior analyses with more recent and better quality data, and a larger, more nationally representative sample of nursing homes.

The Phase II study<sup>68</sup> examined associations between nursing staffing and quality of care at more than 5,000 nursing facilities in 10 states. The data revealed that among long-term residents, nurse staffing levels below 4.1 hours per resident day (below 1.3 hours per resident day for licensed nurses (RNs, LPNs) and below 2.8 hours per resident day for nurse aides and assistants could have adverse consequences such as pressure sores and urinary incontinence.<sup>75</sup> Thus, there appears to be evidence supporting the relationship between increases in nurse staffing ratios and avoidance of critical quality of care problems. Above identified nurse staffing thresholds, however, increased staffing did not result in improved quality. Depending on the nursing home population, the thresholds ranged between 2.4 - 2.8, 1.15 - 1.30, and 0.55 - 0.75 hours/ resident day for nurse aides, licensed staff (RNs and LPNs combined), and Registered Nurses, respectively. Although no significant quality improvements were observed for staffing levels above these thresholds, quality was improved with incremental increases in staffing up to and including these thresholds.

## **IV. Conclusions**

Over the past 20 years the bulk of studies examining associations between nurse staffing and patient outcomes have occurred in acute care settings. However, some work has examined correlations between nurse staffing and resident outcomes in nursing facilities.

## **Acute Care**

Predominantly cross-sectional studies with fewer longitudinal studies have been conducted examining associations between nurse staffing levels and patient outcomes (i.e., failure to rescue, inpatient mortality, medication errors, falls, decubitus ulcers, etc.). Three systematic reviews<sup>9,10,76</sup> and recently published peer-reviewed articles examining nurse staffing and patient outcomes provide comprehensive results that minimize the chance of bias and ensure reliability of the available evidence.

The evidence indicates that the research to date remains inconclusive of whether patient safety is significantly affected by nurse staffing levels in acute care settings. Numerous major limitations have been identified such as inconsistencies in study designs, methodology, and nursing staff measurement hampering efforts to compare findings across studies. Thus, the literature continues to remain inconclusive in supporting specific minimum nurse-patient ratios for hospitals, especially in the absence of adjustments for skill and patient mix.<sup>9</sup> This is highlighted by preliminary findings which suggest there may be associations between hospital staff nurses level of education and patient outcomes. Aiken<sup>11</sup> reports that a higher proportion of hospital staff nurses with bachelor's, master's or other type of degree is related to reductions in mortality and failure-to-rescue following common surgical procedures. Although these findings are preliminary they do begin to underscore the '*point that having more nurses, rather than more of the right ones and in the right environment, does not necessarily achieve better outcomes*'.<sup>77</sup> In conclusion, further research is required to substantiate significant cause and effect relationships between nurse-to-patient ratios and subsequent adverse patient outcomes.

## **Nursing Facilities**

The phase II study conducted by the Centers for Medicare and Medicaid Services (CMS)<sup>68</sup> examining relationships between nurse staffing and quality of care at more than 5,000 nursing facilities in 10 states has revealed that among long-term residents, nurse staffing levels below 4.1 hours per resident day (below 1.3 hours per resident day for licensed nurses (RNs, LPNs) and below 2.8 hours per resident day for nurse aides and assistants could have adverse consequences such as pressure sores and urinary incontinence. However, further research is required to uncover the relationship between nurse staffing levels and other important quality of care domains that adversely impact nursing home residents.

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## PATIENT SAFETY TASK FORCE

The Healthcare Association of Hawaii Patient Safety Task Force (PSTF) was established by the Healthcare Association of Hawaii in 2001 to take a proactive approach to address national and local concerns about patient safety. The mission of the PSTF is to bring representatives from all aspects of healthcare together in an open and blame-free environment to hold frank and full discussions about issues affecting patient safety in order to improve the quality of care delivered.

Initial objectives included (a) developing a plan for identification, analysis, and evaluation of factors that affect patient safety; (2) identifying and recommending the utilization of best practices to improve the delivery and quality of health care; and (3) promoting community awareness through education and advocacy.

The PSTF has collaborated with the Hawaii Health Information Corporation (HHIC), an independent, neutral health data organization, regarding data standards and best practices in measurement and reporting of patient safety data. HHIC developed a patient safety webpage with links to the Centers for Medicare and Medicaid Services (CMS) hospital, nursing home and home health agency comparative quality of care data.

In also reporting on the continuing patient safety efforts in Hawaii, the task force noted the membership's alignment with the Joint Commission on Accreditation of Healthcare Organizations' (JCAHO) goals to improve patient safety. These goals include:

- 1) Improve communication among caregivers.
- 2) Encourage patients' active involvement in their own care.
- 3) Define and communicate the means for patients and their families to report concerns.
- 4) The organization identifies safety risks inherent in its patient population.

The PSTF is continuing its efforts in expanding member participation to include long term care facilities and critical access hospitals. It has endorsed PSTF representatives and Hawaii State Department of Health representatives to participate in a national training program for state teams to join the Patient Safety Improvement Corps (PSIC) sponsored by the Department of Veterans Affairs and the Agency for Healthcare Quality and Research. The PSTF co-chairpersons will participate in a PSIC train-the-trainer conference for all 50 states in September, 2006.

Patient safety issues of concern to the public have been and will continue to be brought to the group to be addressed. Issues may include an incident involving medical gas use, medication reconciliation throughout the healthcare continuum, and ultimately quality outcomes related to healthcare staffing.

August 16, 2006

## WHAT'S STRESSING OUR HEALTHCARE INDUSTRY?

- Hawaii has one of the lowest Medicare reimbursement rates of any state - 37% lower than the average on the mainland - even though costs to deliver care in Hawaii are among the highest in the nation.
- Medicare/Medicaid/Med-QUEST patients accounted for 40% of hospitalizations in Hawaii in 2000.
- Medicare/Medicaid patients represent more than 80% of nursing home residents each year.
- About 25% of Hawaii's Medicaid budget is spent on inpatient-based long-term care.
- In 2002-03, the State Department of Human Services reduced Medicaid payments to healthcare providers by several million dollars. Because more of our population is elderly and most depend on government programs, reduced payment for care by government impacts Hawaii to a greater extent than the nation as a whole.

HAA is a non-profit organization that represents and advocates on behalf of Hawaii's people, healthcare providers, healthcare facilities, and the healthcare services they provide.



# A PERFECT STORM

THE FORCES SHAPING  
HAWAII'S APPROACHING  
HEALTHCARE CRISIS



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# HAWAII'S HEALTHCARE CRISIS

COULD HAVE A PROFOUND EFFECT ON YOU,  
YOUR FAMILY, EMPLOYERS, AND EMPLOYEES.



In Hawaii, we're fortunate to have quality healthcare accessible when and where we need it.

But that could be changing.

For years, the operating costs of hospitals, nursing homes, and hospices have risen steadily, while Federal and State reimbursements for the services they perform have declined. Until solutions are found, our hospitals and others are facing a financial crisis that will leave them unable to provide the range of services and level of quality we expect and deserve.

No business can survive when it is only paid 37 cents for every dollar of services.

## WHY ARE OPERATING COSTS RISING?

A number of factors have converged in a "perfect storm" scenario, which, if left alone, will reduce the capability and effectiveness of Hawaii's hospitals, long-term care facilities, hospices, and home-based healthcare.

### Federal regulations add to costs

The federal government requires healthcare providers to spend millions of dollars to adapt to new, complicated, and often unnecessary regulations. The government pays nothing for this expensive undertaking, which means Hawaii's hospitals must absorb the cost, often cutting costs in other areas to survive.

### Reduced support for Medicaid and Medicare

Federal and state governments are paying less of the cost for patients on Medicaid and Medicare. **Incredibly, government payments amount to only about 37 cents for every dollar of patient costs.** What's more, it's typically three to six months before the payments are made. As a result, hospitals are losing money while caring for a large segment of Hawaii's population. Someone has to pay for this care, and it may be you. To lessen the impact of the cost disparity on the medical community, employers and those who are privately insured must absorb the burden by being charged more for services.

### The high cost of caring for our elders

Hawaii's long term care residents are among the oldest and most dependent in the nation. Federal and state policies are increasingly limiting coverage for this group. The result: the cost of providing for patients is greater than the payments from Medicare and Medicaid, forcing healthcare providers to operate at a loss.

### Increased charity care and bad debt

Everyone, including the most disadvantaged, deserves quality healthcare. And while Hawaii's healthcare providers deliver some of the best, most accessible care in the nation to those without insurance or in dire straights, the result is an annual industry loss of about \$100 million in charity care and bad debt. That's up from \$52 million just five years ago.

Patient services and healthcare jobs have been lost or cut back across the state.

## WHAT DO WE STAND TO LOSE?

To reduce their losses, Hawaii's hospitals have already been forced to discontinue or reduce day care for sick children, cardiac rehabilitation, obstetrics and nutrition services, and entire nursing units. Healthcare jobs have been lost to communities across the state. Now at risk are alcohol and drug treatment programs for adolescents, school health programs, counseling services, dental care, rape counseling, and immigrant care services.

Hospitals can't continue to provide high-quality patient services and fund these and other programs without some financial relief.

## WHAT CAN YOU DO?

We can't afford to wait for our healthcare system to collapse before we take steps to fix it. Learn the facts about the crisis facing healthcare in Hawaii. Contact the Healthcare Association of Hawaii (HAH) at 808-521-8961 or visit our website at [www.hah.org](http://www.hah.org). Then call or write your legislators and urge them to:

- Increase payments for QUEST patients and patients of other government programs to ensure that government pays its fair share of treatment costs
- Increase the amount of Medicaid payments made to hospitals and nursing facilities
- Reform state tort laws to reduce legal costs

If Hawaii's hospitals are to continue providing high-quality patient care and services, we must act now.

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# SENATE CONCURRENT RESOLUTION

URGING HEALTHCARE FACILITIES IN THE STATE OF HAWAII TO IMPLEMENT  
THE "UTILIZATION GUIDE FOR THE AMERICAN NURSES ASSOCIATION  
PRINCIPLES FOR SAFE STAFFING."

- 1           WHEREAS, there is a fundamental need to protect public  
2 health and safety by promoting quality healthcare and improving  
3 the delivery of healthcare services to patients in Hawaii's  
4 healthcare facilities; and  
5
- 6           WHEREAS, nurse staffing is a matter of major concern  
7 because of the effects it can have on patient safety and quality  
8 of care; and  
9
- 10           WHEREAS, improved medical technology in healthcare delivery  
11 systems have resulted in higher acuity levels among patients;  
12 and  
13
- 14           WHEREAS, acuity determines how much care a patient needs;  
15 the higher the acuity level, the greater the amount of care -  
16 often more specialized care - is required; and  
17
- 18           WHEREAS, the Joint Commission on Accreditation of  
19 Healthcare Organizations report of 2002 concluded that the lack  
20 of direct care provided by registered nurses contributed to  
21 nearly a quarter of the unanticipated problems that resulted in  
22 injury or death to patients; and  
23
- 24           WHEREAS, establishing standards for direct-care registered-  
25 nurse-to-patient ratios that take into account acuity measures  
26 based on the American Nurses Association's staffing principles  
27 will protect nurses and patients from the possible harmful  
28 ramifications of unsafe staffing practices; and  
29
- 30           WHEREAS, these standards will address the nursing shortage  
31 in Hawaii, aid in recruitment of new registered nurses and  
32 licensed practical nurses, and improve retention of nurses who



1 are considering leaving direct patient care because of demands  
2 created by constant inadequate and inappropriate staffing; and  
3

4 WHEREAS, it is imperative that patient safety and quality  
5 healthcare be ensured by establishing, as a baseline,  
6 direct-care registered-nurse-to-patient staffing requirements in  
7 healthcare facilities without an acuity system that is based  
8 upon the American Nurses Association's staffing principles; now,  
9 therefore,  
10

11 BE IT RESOLVED by the Senate of the Twenty-third  
12 Legislature of the State of Hawaii, Regular Session of 2006, the  
13 House of Representatives concurring, that healthcare facilities  
14 in the State of Hawaii, including but not limited to acute care  
15 facilities, long term care and skilled nursing facilities,  
16 dialysis units, hospice facilities, ambulatory surgical centers,  
17 and psychiatric facilities, are urged to implement the  
18 "Utilization Guide for the American Nurses Association  
19 Principles for Safe Staffing"; and  
20

21 BE IT FURTHER RESOLVED that the Center for Nursing is  
22 requested to convene a working group of stakeholders, including:  
23

- 24 (1) The Department of Health (DOH)
- 25
- 26 (2) The Healthcare Association of Hawaii (HAH);
- 27
- 28 (3) Hawaii Long Term Care Association (HLTCA);
- 29
- 30 (4) The Hawaii State Center for Nursing (HSCN);
- 31
- 32 (5) The State Board of Nursing (BON); and
- 33
- 34 (6) The Hawaii Nurses' Association (HNA),
- 35

36 to address issues of appropriate staffing levels and patient  
37 safety; and  
38

39 BE IT FURTHER RESOLVED that Hawaii's health care  
40 facilities, such as acute care facilities, long term care and  
41 skilled nursing facilities, dialysis units, hospice facilities,  
42 ambulatory surgical centers, and psychiatric facilities are  
43 requested to provide the Center for Nursing annual data related  
44 to:



- 1 (1) Concerned staffing forms/documentation received from
- 2 nurses providing direct patient care; and
- 3
- 4 (2) Use of traveling agency nurses and/or agency personnel
- 5 (both local and mainland agencies), including:
- 6
- 7 (A) The number of hours worked;
- 8
- 9 (B) The amount of mandatory and voluntary overtime
- 10 hours worked by all nurses providing direct
- 11 patient care;
- 12
- 13 (C) The number and type of negative patient care
- 14 outcomes; and
- 15
- 16 (D) The number of nursing employee work-related
- 17 injuries/absenteeism within a calendar year; and
- 18

19 BE IT FURTHER RESOLVED that the Center for Nursing is  
20 requested to submit a status report of its findings and  
21 recommendations to the Legislature twenty days prior to the  
22 Regular Session of 2007; and

23

24 BE IT FURTHER RESOLVED that certified copies of this  
25 Concurrent Resolution be transmitted to the Center for Nursing,  
26 the Director of Health, the Dean of the University of Hawaii's  
27 School of Nursing and Dental Hygiene, the Executive Officer of  
28 the Board of Nursing, the Executive Director of Hawaii Nurses'  
29 Association, the President and Chief Executive Officer of the  
30 Healthcare Association of Hawaii, the Hawaii Long Term Care  
31 Association, the Hawaii Health Systems Corporation, Hospice  
32 Hawaii, Liberty Dialysis, and Kahi Mohala.

