



*The Ideal Hospital Project's*  
**Work Environment Survey 2007-2008**  
**Annual Report**

**August 2008**

## A Letter to the Reader

As Chair of the Work Environment Workgroup of the Gulf Coast Health Services Steering Committee (GCHSSC), I am pleased to present this fifth Annual Report of the Ideal Hospital Project\*.

The Ideal Hospital Project is part of a HRSA grant awarded to the Houston-Galveston Area Council for the purpose of working with hospital employers to improve their working environments and thus improve retention of RNs in hospital workplaces. The grant has been implemented under the guidance of Work Environment workgroup of the Gulf Coast Health Services Steering Committee and is directed by Donde Batten, PhD, Batten Consulting, and the professional staff of Workforce Solutions.

The Annual Report features data from a diverse array of hospitals in the Gulf Coast region, including all types of ownership (e.g. not-for-profit, government, investor-owned), missions (e.g. general acute care, specialty, academic medical centers, LTACs, etc.), and sizes—hospitals less than 50 beds to over 1,000 beds. Over the five years of the project, we have found that this report provides a useful snapshot of work environment indicators in Gulf Coast hospitals. We have not found that outcome patterns follow any specific hospital characteristic (size, ownership or mission).

Hospitals leaders have found the report to be a relevant measure of their individual performance and a useful tool for comparison to regional norms. The information is useful in decision-making from the unit level to the Board room and in documenting the hospital's performance to external accreditation and certification agencies such as the Joint Commission for Accreditation of Health Care Organizations and the American Nurses Credentialing Center (Magnet status).

More importantly, by participating in the Ideal Hospital Project, hospitals have contributed to a major regional effort to influence positive changes in our community's healthcare work environment. We face a future in which a major shortage of nurses is predicted. Part of the solution to this issue is improved retention of nurses already in the workforce. As we consider innovations in our own hospitals that improve safety, satisfaction and performance, it is very helpful to have information available that measures not only our individual progress but also our region's progress by using benchmarks such as nurse turnover, satisfaction, average tenure, and average age, in addition to examining staffing strategies through benchmarks on agency and overtime utilization, staffing mix, and hours per patient day.

This is the last year of HRSA funding for this project. Because the Work Environment workgroup thinks that the baseline regional data has been very useful in monitoring changes in hospitals' working environments, we are committed to continuing a modified form of the annual survey. We would like your feedback on the usefulness of this report and any specific suggestions that you have for a continued regional survey.

We believe that innovative action is needed now to ensure a long-term supply of competent, compassionate, and satisfied nurses for hospitals in our region. We hope this report helps you take the actions necessary to attract and retain employees for your hospitals.

Sincerely,



Kathy J. Shingleton, MBA, EdD, SPHR  
Vice President for Human Resources and Employee Services  
University of Texas Medical Branch

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\* Collection of this data through work environment surveys has been funded by a grant from the Division of Nursing, Bureau of Health Professions, Health Resources Services Administration under the Nurse Education, Practice and Retention program.

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## Introduction to the *Work Environment Survey 2007*

For the past five years, the Gulf Coast Health Services Steering Committee (GCHSSC) Work Environment Workgroup (WEW) has invited all hospitals in the region to participate in the Work Environment Survey.<sup>1</sup> Participation has remained relatively stable during the five years of the project. Hospital participation dropped in 2005 due to the tremendous stress on regional hospitals from hurricanes Katrina and Rita. In 2007, 46 of the 118 hospitals (39%) in the region participated in survey.

	2003	2004	2005	2006	2007
Number of Hospitals Participating	45	49	43	48	46
Number of Hospitals in Region	91	95	101	119	118

Participation in the survey comes from a diverse cross-section of eligible hospitals: investor-owned, non-for-profit and governmental; urban and rural; general acute care, long-term acute care, and specialty; large and small, with bed sizes ranging from less than 100 to over 1,000 beds. All six Houston-area Magnet hospitals (Magnet designation by the American Nursing Credentialing Center) participated in the survey in 2007. Nearly forty percent (39%) of area hospitals participated in 2007 representing 65% of the hospital beds in the region. Over the five years of the survey, the number of beds represented by the respondents has ranged from 60% to 71% of the total hospital beds in the region. In 2007, 53.8% of Disproportionate Share Hospitals participated, accounting for 62.8% of those beds in the region. Appendix Table 1 shows a comparison of participating hospitals in 2007 compared to the total hospitals in the region. The full list of participating hospitals can be found in the *Supplement to the Annual Report* (see the *Supplement* at [www.gchssc.com](http://www.gchssc.com), under the Publications tab).

The data reported in this survey are not broken down by ownership category, location, mission, or bed size. The number of hospitals reporting on each measure each year is too small to conduct statistical analyses of differences due to these characteristics. Yearly data do not reveal whether outcome patterns are related to any specific hospital characteristic.

The survey measures are reviewed each year by the WEW, a volunteer group that includes human resources and nursing executives from regional hospitals as well as academicians and consultants. Members make changes to the survey based on the importance and/or reliability of the data and the ability and/or willingness of hospitals to provide the data in the manner requested. Members have significant experience in hospital administration, hospital outcomes measurement, benchmarking, and survey design. (A complete list of members is included in Table 2 of the Appendix.) Only a few survey questions are changed each year so the survey remains consistent for comparisons across years. The complete 2007 Work Environment Survey is shown in the *Supplement to the Annual Report* (see the *Supplement* at [www.gchssc.com](http://www.gchssc.com), under the Publications tab).

All 118 hospitals in the Gulf Coast Region were invited to participate in the project in 2007-2008. Invitations were sent to Chief Executive Officers, Chief Nursing Officers, and Chief Human Resources Officers in January 2008. If interested, executives responded by fax or email and designated survey contact persons. The Work Environment Survey was available on-line, using the Gulf Coast Health

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<sup>1</sup> The history of the Ideal Hospital Project is described in the *Supplement to the Annual Report*.

Services Steering Committee website ([www.gchssc.com](http://www.gchssc.com)). Hospitals agreeing to participate in the survey were assigned a unique identification code in order for them to enter data confidentially.

<sup>1</sup> The history of the Ideal Hospital Project is described in the *Supplement to the Annual Report*. Because the availability of data varies in each participating hospital, each hospital may report data for some measures but not others. We have chosen to report all valid data for each reported measure. For example, we are reporting all voluntary turnover data, even if general turnover data were not reported by the same hospital or vice versa.

Since data are collected from a diverse array of hospitals, there is large variation within each category of measurement. For this reason, medians are used to report the regional values. A median is the middle value in a set of values and represents the mid-point of the reporting hospitals, meaning that 50% of participating hospitals reported a value greater than the median and 50% reported a value less than the median value. We also report the range of values to represent the breadth between the highest and lowest reported measures.

The benefit of using medians as compared to means (averages) is that medians are not distorted by dramatically outlying values. For example, if five hospitals reported the following turnover rates for nurses, 3%, 5%, 10%, 12%, and 60%, the median or middle turnover rate is 10%. The mean or average turnover rate is 18%, a calculation that is highly affected by the 60% turnover rate in the sample. The 10% median is closer to the true representative turnover rate. Medians are most useful measures of central tendency when the data samples are likely to have unusually high or low values (as our diverse array of hospitals may report) or when the goal is to forecast the future rates that hospitals are likely to experience in a year. By using medians and ranges as a basis for comparison, hospitals can compare their own performance data to the regional normative midpoints and the ranges of the sample. Medians and ranges for each measure are reported in Appendix Table 4.

## General Turnover Rates Increase

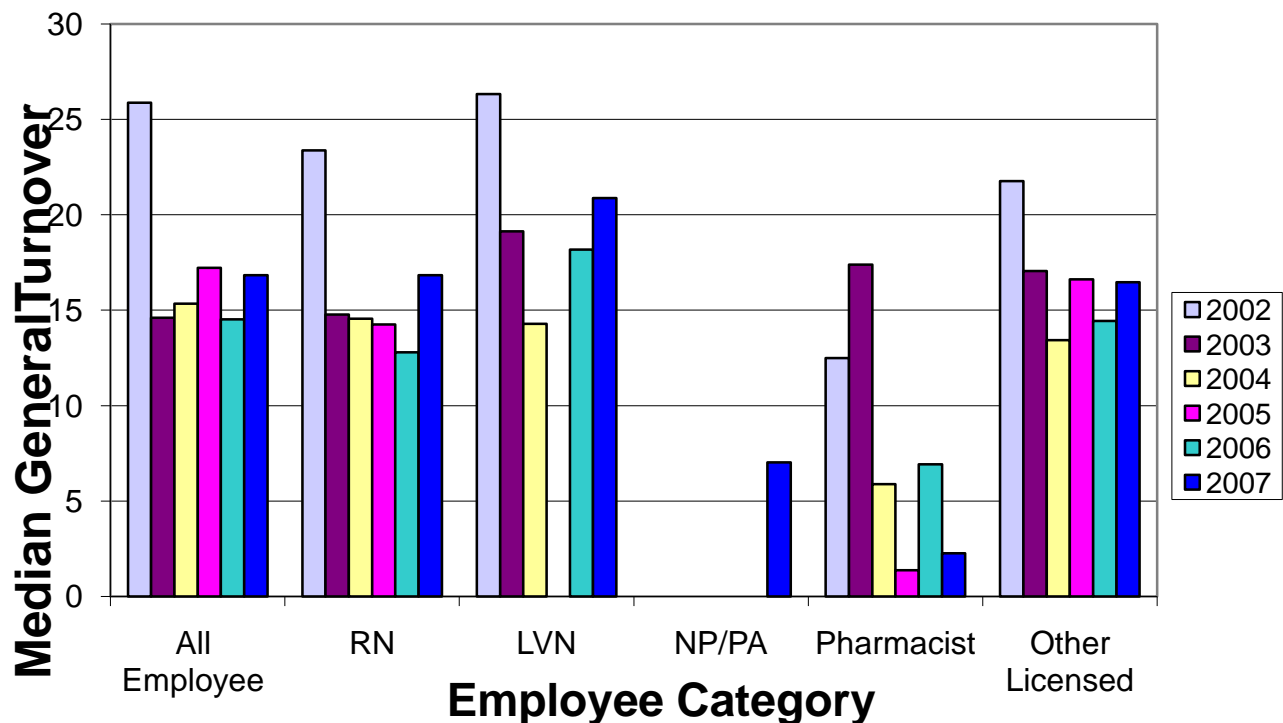
Annual general turnover data for full-time employees were collected in the survey (see specification of measures in Appendix Table 3). Since data on general turnover rates were collected by the GCHSSC in 2002 prior to the start of the Ideal Hospital Project, these values are also displayed. See Appendix Table 4 for the number of reporting hospitals, medians and ranges.

Median general turnover rates generally increased in 2007 for all employee categories except pharmacist. In 2007, all employee, RN, and LVN general turnover rates increased to their highest level since 2003. (The LVN median general turnover rate is missing for 2005 because the WEW substituted Nurse Practitioner/Physician Assistant (NP/PA) data collection for LVN data collection that year. The LVN measure was reinstated in 2006.) LVN turnover is the highest general turnover rate among all employee categories in 2007.

Median general turnover rates for NP/PAs were zero in 2005 and 2006, but increased to 7.03% in 2007 (zero values are not displayed on the graph). However, the range of turnover rates for NP/PAs show that they vary considerably among hospitals. Although 10 hospitals experienced no NP/PA turnover in 2007, 12 hospitals experienced NP/PA turnover rates ranging from 5.8 to 200%.

The median general turnover rate for pharmacists was extremely low, at 2.26%, in 2007. This is consistent with generally low turnover rates for pharmacists since 2004. However, the median general turnover rate for other licensed staff was similar to the rates for all employees and RNs, near 16.5%.

**General Turnover Rates  
Reported by Hospitals in the Gulf Coast Region in 2002-2007**



## **General Turnover Rates *continued***

The Gulf Coast hospitals responding to the 2007 Work Environment Survey seemed to fare better than other groups reporting turnover. Although data for the exact time period are not available, in 2000, the national average turnover rate for RNs was 21.3% with larger hospitals reporting lower average rates (17.1%) and specialty hospitals showing higher rates (25.2%). Southern hospitals reported an average turnover rate of 24%.<sup>2</sup> In Texas, a 2006 statewide assessment of hospital turnover rates showed an increase from 15.3% in 2004 to 18.2% in 2006. The LVN turnover rate was 24.4% and the certified nursing assistant turnover rate was 43.2%. Furthermore, 36% of Texas hospitals reported a 10% or greater turnover rate for RNs and a 73% turnover rate for LVNs in the past year.<sup>3</sup>

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<sup>2</sup> AONE. (2002). *Acute Care Hospital Survey of RN Turnover and Vacancy Rates in 2000*. Created by The HSM Group, LTD., for the American Organization of Nurse Executives. Accessed on 7/12/2007 at <http://www.wha.org/workForce/pdf/aone-surveyrnvacancy.pdf>.

<sup>3</sup> Texas Center for Nursing Workforce Studies. (2006). *Texas Hospital Nurse Staffing Survey, 2006*. Texas Department of State Health Services.

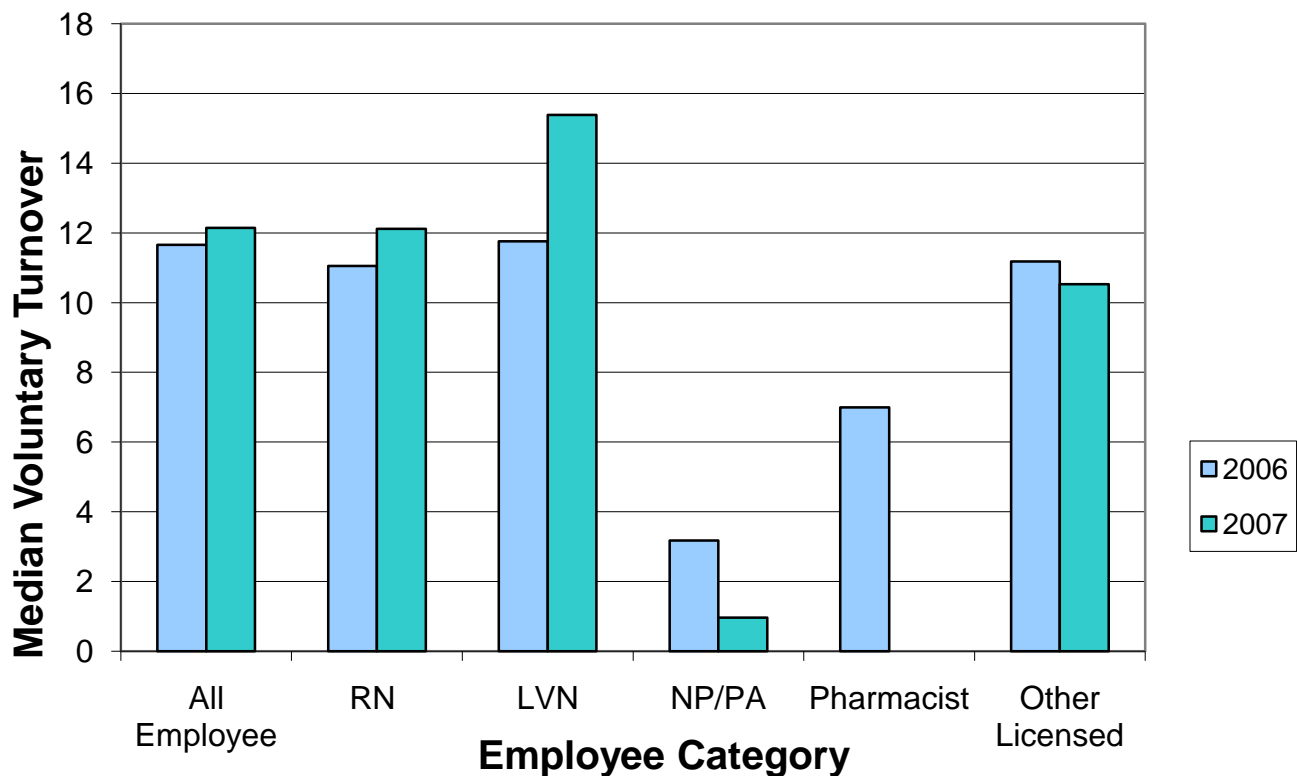
## Voluntary Turnover Rates Vary Widely

Voluntary turnover data for full-time employees were collected in 2006 and 2007. In general, voluntary turnover is a measure of the percentage of all employees voluntarily leaving each hospital for reasons not due to personal physical/health conditions, relocation, retirement, layoff, performance problems, or temporary status as specified by National Quality Forum standards (see specification of measures Appendix Table 3). See Appendix Table 4 for the number of reporting hospitals, medians, and ranges.

Voluntary and general turnover are not directly comparable measures because some hospitals did not report data on both measures. We chose to include data on either measure when submitted by a hospital because it creates a better picture of the regional turnover on each measure. Because of this, the reader should not interpret voluntary turnover as a subset of general turnover.

Median voluntary turnover rates increased for all employees, RNs, and LVNs in 2007, while the rates for NP/PA, pharmacist, and other licensed staff decreased. The median voluntary turnover rate for pharmacist was zero (zero values are not shown on the graph) and for NP/PA was only 1%. Medians for the other four job categories were over 10%. The median voluntary turnover rate for LVNs was the highest in the group, at 15%. Ranges in voluntary turnover rates for each employee classification show considerable variation among hospitals.

**Voluntary Turnover Rates  
Reported by Hospitals in the Gulf Coast Region in 2006-2007**



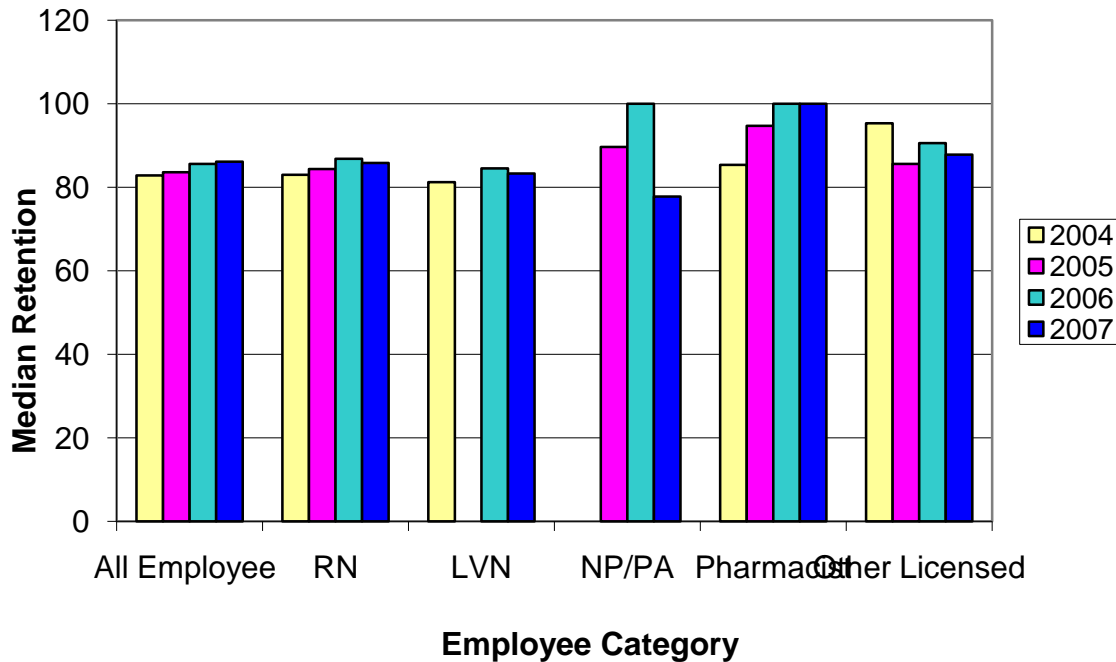
## Retention Rates Are Relatively Stable

Annual retention rate data for full-time employees were collected in the survey (see specification of measures in Appendix Table 3). Data are not available for 2003 because the data submitted on retention were not reliable. See Appendix Table 4 for the number of reporting hospitals, medians, and ranges.

General turnover and retention rates are not directly comparable measures because some hospitals did not report data on both measures. We chose to include data on either measure when submitted by a given hospital because it creates a better picture of the regional turnover on each measure.

Median retention rates generally have remained relatively stable since 2004 for all employees, RNs, and LVNs, showing slight movement up or down of less than 2%. The median retention rates for all employees and RNs are 86%, with the retention rate for LVNs at 83%. (The LVN median retention rate is missing for 2005 because the WEW substituted new NP/PA data collection for LVN data collection that year.) The NP/PA median retention rate decreased substantially from 100% in 2006 to 78% in 2007, while the pharmacist median retention rate stayed at 100% for the second year in a row. The median retention rate for other licensed staff decreased slightly to 88%.

**Retention Rates  
Reported by Hospitals in the Gulf Coast Region  
2004-2007**



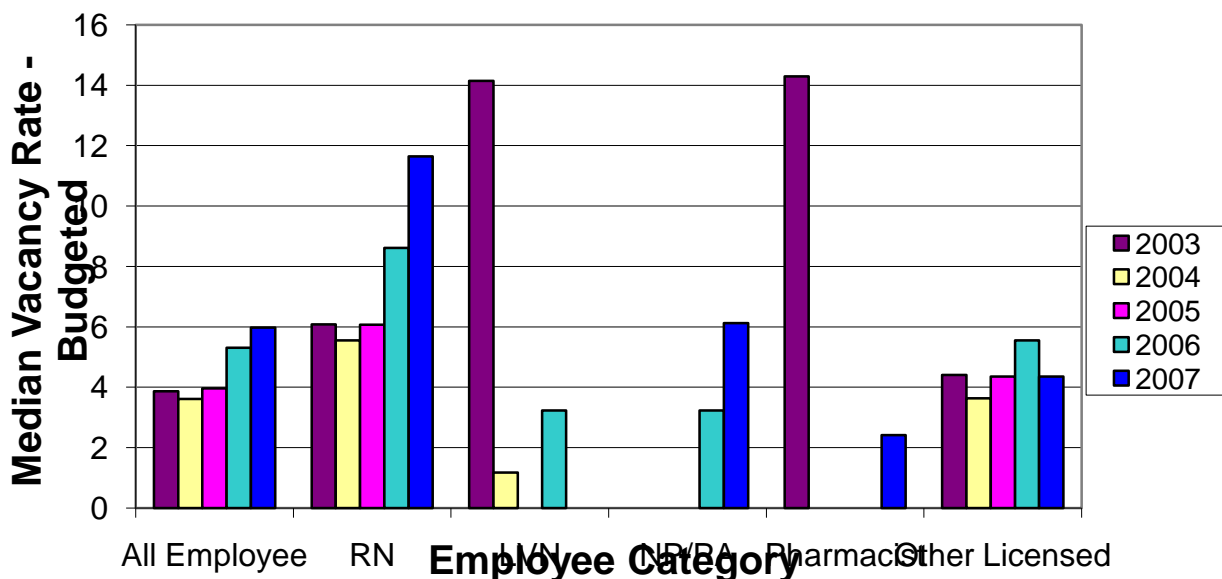
## Vacancy Rates --- Vacancies Compared to Budgeted Positions

Annual vacancy rate data for full-time employees were collected in the survey (see specification of measures in Appendix Table 3). The WEW believes that valuable information is gained from examining the number of vacancies two different ways: (1) comparing the number of vacancies to the number of budgeted positions (called vacancy rate) shows the percentage of anticipated, budgeted positions that are currently unfilled, and (2) comparing the number of vacancies to headcount (called vacancy/headcount ratio) shows the ratio between current employees and vacant positions. For example, in 2007, there is a median vacancy rate of 11.6% of budgeted RN positions. In the same year, there is a median of 12.8% of the RN working headcount that is vacant.

This section highlights the vacancy rates when comparing the number of vacancies to the number of budgeted positions. See Appendix Table 4 for the number of reporting hospitals, medians and ranges. Median vacancy rates and median general turnover are not directly comparable measures for several reasons. First, some hospitals did not report data on both measures. We chose to include data on either measure when submitted by a given hospital because it creates a better picture of the regional perspective on each measure. Also, hospitals with low turnover may have high vacancy rates due to adding more new positions than those that are affected by turnover. Because of this, the reader should not interpret vacancy rates and turnover rates as interchangeable. Note that the LVN median vacancy rate is missing in 2005 because the WEW substituted NP/PA data collection for LVN data collection that year. The LVN measure was reinstated in 2006 and is shown.

In 2007, the vacancy to budgeted positions rate for RNs jumped from 8% to 11.6%, while all other employee categories had rates at or less than 6%. The vacancy rate of NP/PAs doubled, reaching 6.1% in 2007. However, the vacancy rate for all employees rose only slightly from 2006 to 2007. LVNs experienced a decrease in vacancy rate, dropping from 3% to zero. (The zero vacancy rates do not display on the graph.) In contrast, the vacancy rate for pharmacists in the reporting hospitals increased from two years of zero values to 2.4% in 2007. The vacancy rate for other licensed staff was more stable, decreasing to 4%.

**Vacancy Rates --- Budgeted Positions  
Reported by Hospitals in the Gulf Coast Region in 2003-2007**



## Vacancies Compared to Headcount

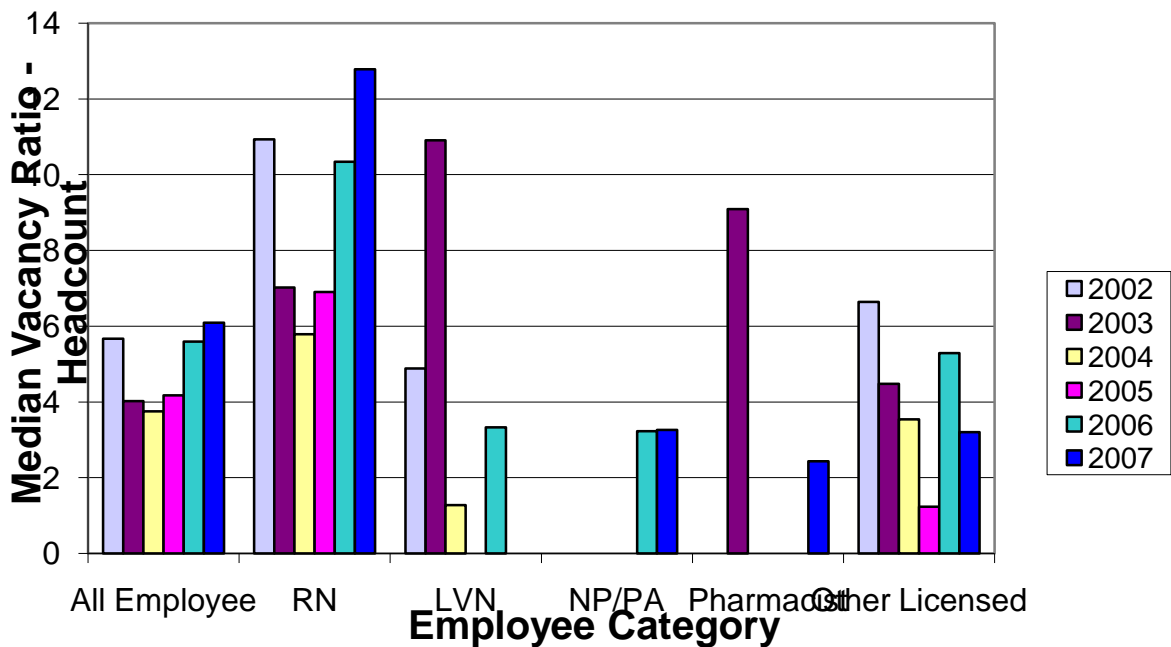
Annual vacancy related data for full-time employees were collected (see specification of measures in Appendix Table 3). This section discusses the number of vacant budgeted positions compared to the headcounts in each hospital. Since vacancy data compared to headcounts were collected in 2002 prior to the start of the Ideal Hospital Project, these values are included. See Appendix Table 4 for the number of reporting hospitals, medians and ranges.

As noted, despite assumptions to the contrary, vacancy ratios and general turnover are not directly comparable measures and should not be interpreted as interchangeable. Also as noted previously, the LVN median vacancy ratio using headcount is missing for 2005 because the WEW substituted NP/PA data collection for LVN data collection that year. The LVN measure was reinstated in 2006.

The 2007 vacancy/headcount ratio increased slightly from 2006 for all employees, having dipped lower in the last few years. RNs had a vacancy/headcount ratio over 12%, double the vacancy/headcount ratios for all employees and at least four times larger than the ratios for other groups. This continues a three-year upward trend in the vacancy/headcount ratio for RNs.

The LVN vacancy/headcount ratio decreased to zero in 2007, much lower than their spike of nearly 11% in 2003. (Zero values are not shown on the graph.) The vacancy/headcount ratios for NP/PAs, pharmacists and other licensed staff were similarly low in 2007, at the 2-3% level. The NP/PA ratio showed almost no change from 2006. The pharmacist vacancy/headcount ratio rose to 2% after three years of zero ratios. The vacancy/headcount ratios for other licensed staff dropped to 3%, near the 2004 level.

**Vacant Budgeted Positions Compared to Headcount  
Reported by Hospitals in the Gulf Coast Region in 2002-2007**



## Demographics Show Subtle Changes

### *Ethnicity*

Ethnicity information was collected for RNs, LVNs, and all employees in participating hospitals as of December 31, 2007. Of the 46 hospitals, 43 submitted RN information, 42 submitted LVN information, and 40 submitted all employee information.

In 2007, hospitals showed similar proportions of white and minority employees among the three categories as were reported in the past years (RN: 45% white and 53% minority; LVN: 42% white and 56% minority; and all employee: 37% white and 62% minority). There were slight changes in proportions among minorities for RNs from 2006 to 2007 (a decrease from 4% to .5% of American Indian RNs, and an increase from 25% to 27% of Asian RNs). Approximately 2% of employees in all categories were designated as having ethnicity information not available.

### **Ethnic Distribution of Employees Reported by Hospitals in the Gulf Coast Region 2007**

	<b>Hospital Population</b>	<b>Percentage of Total Hospital Population</b>
<b>RNs</b>		
White	7,953	45.0
Total Minorities	9,411	53.2
Black	3,217	18.2
Hispanic	1,259	7.1
American Indian	91	.5
Asian	4,820	27.3
Pacific Islander	24	.1
Information Not Available	321	1.8
<b>LVNs</b>		
White	559	42.04
Total Minorities	735	55.8
Black	440	33.4
Hispanic	191	14.5
American Indian	10	.8
Asian	87	6.6
Pacific Islander	7	.5
Information Not Available	24	1.8
<b>All Employees</b>		
White	25,394	36.7
Total Minorities	42,740	61.8
Black	20,720	30.0
Hispanic	10,189	14.7
American Indian	272	.4
Asian	11,489	16.6
Pacific Islander	70	.1
Information Not Available	1,046	1.5



## ***Gender***

Gender information showed no real changes in the proportion of females to males in RN, LVN, and all employee categories in 2007 compared to past years. Approximately 90% of RNs and LVNs are female, while approximately 75% of all employees are females. Of the 46 hospitals, 42 submitted RN information, 41 submitted LVN information, and 37 submitted all employee information. Detailed information about gender data can be found in the *Supplement to the Annual Report* (see the *Supplement* at [www.gchssc.com](http://www.gchssc.com), under the Publications tab).

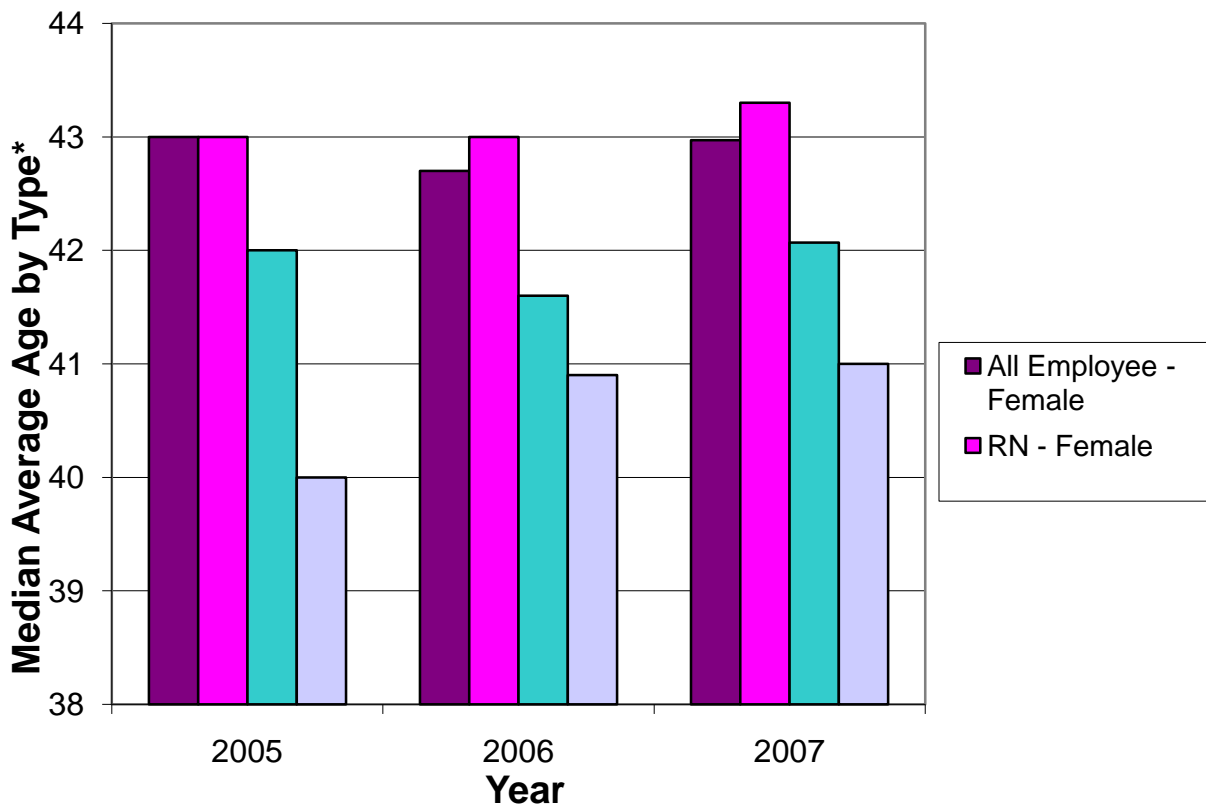
## Demographics *continued*

### *Average Ages Are in the Low 40s*

Starting in 2005, the survey requested that hospitals report average ages of employees in certain job categories. Data were collected for all employees and RNs, female and male (see specification of measures in Appendix Table 3). Average age was defined as the average of the ages of all employees in that category (e.g., the average age of all female RNs). See Appendix Table 4 for the number of reporting hospitals, medians and ranges.

In 2007, median average ages for females were stable at 43 years across both employee categories and in all three years. As in 2006, the median of average age for males was slightly lower for RNs (41 years) than for all employees (42 years) and was lower than the average age for females. In general, the median average age was high— between 41 and 43— for both employee categories and for both genders.

**Average Ages of Employees  
Reported by Hospitals in the Gulf Coast Region  
2005-2007**



\*Categories of types of employees are: RN and all employees, by female and male.

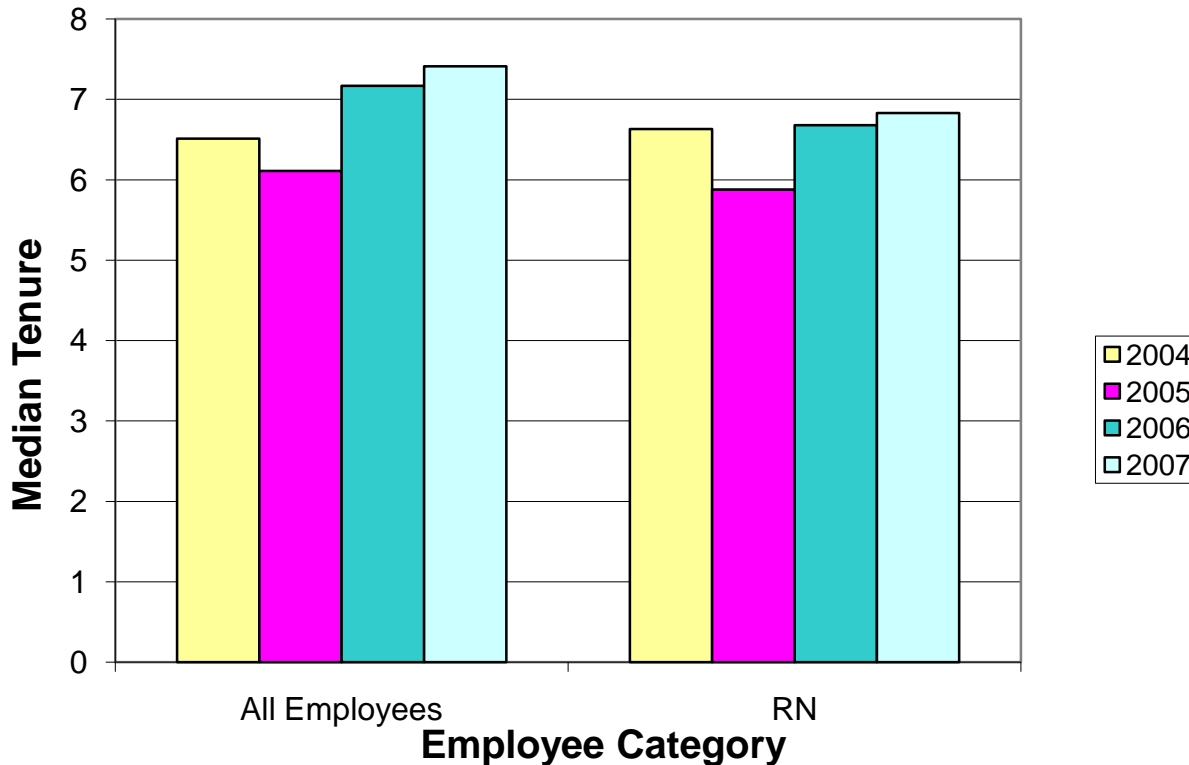
## Demographics *continued*

### *Tenure Has Increased Slightly*

Years of service data were collected in the survey so that tenure (average years of service per employee) could be calculated for all employees and RNs as of a specified date (see specification of measures in Appendix Table 3). See Appendix Table 4 for the number of reporting hospitals, medians and ranges.

Median tenure is similar for all employees and RNs, with all employee median tenure slightly higher. Median tenure has been gradually increasing over the last three years. In 2007, the average tenure was 7.4 years for all employees and 6.8 years for RNs.

**Tenure of Employees by Category  
Reported by Hospitals in the Gulf Coast Region  
2004-2007**



## Demographics *continued*

### *Specialty Certification and Education Levels Vary Among Hospitals*

For the second year, data on specialty certification and terminal degrees were collected for RNs employed full-time and part-time (see specification of measures in Appendix Table 3). Only one-third of the participating hospitals provided information on most of these measures in 2007, perhaps because they do not track this information. However, more than half of the hospitals provided data on nurse practitioner and physician assistant specialty areas. Since these specialty areas often have different job titles and/or pay scales, the data likely are more routinely collected. (See Appendix Table 4 for the number of reporting hospitals.) The median percentage of RNs having certification in any specialty was 9.42% in 2007—down from 16.5% in 2006. The range of medians for this category was the same in both 2006 and 2007—0% to 35%.

The low median percentage of nurses per hospital for clinical nurse specialists, nurse practitioners, and physician assistants indicates that most hospitals do not have many nurses with those specialty certifications. However, the wide ranges indicate that some hospitals have a large percentage of nurses in those specialties, especially physician assistants, and other hospitals have few or none at all.

The percentages related to education levels of RNs per hospital show that, for the vast majority, associates or bachelors degrees are their terminal degrees. The median percentage of MSN prepared nurses in hospitals is 4.7%, although the range varies from 0% to 9% MSN prepared nurses. As expected, the percentage of PhD prepared nurses is very small, with a median of zero.

#### **Specialty Certification and Education Levels of RNs Reported by Hospitals in the Gulf Coast Region 2006-2007**

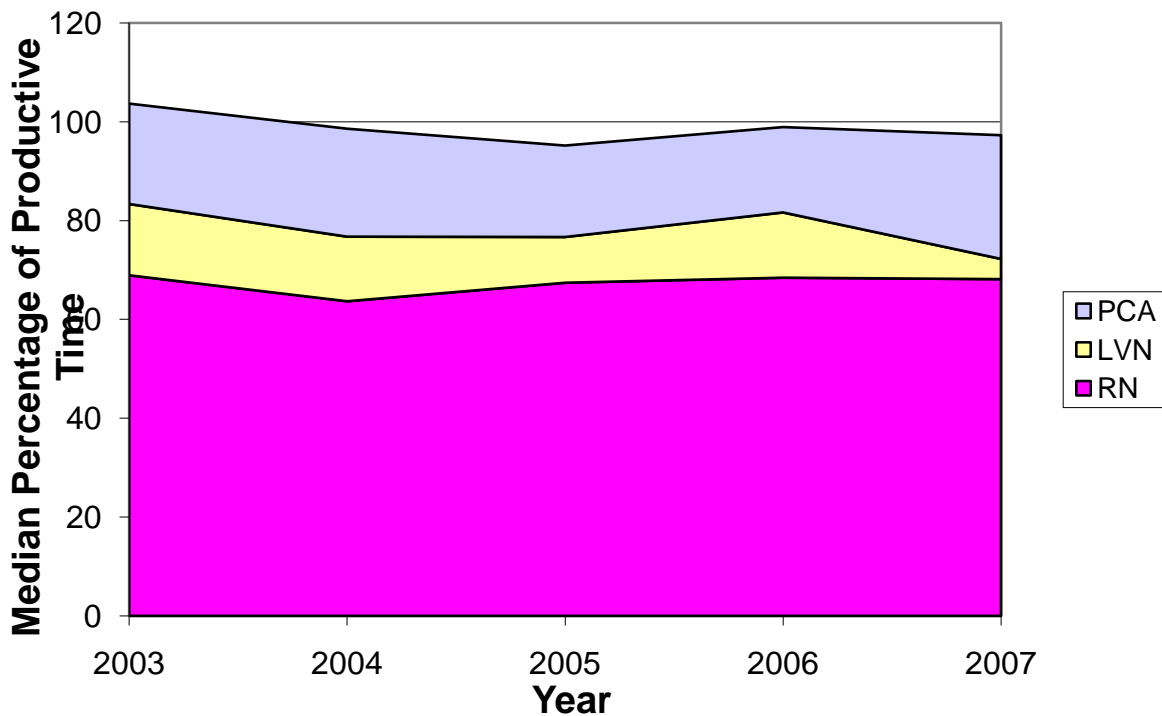
	<b>2007 Range (Percentage of Nurses per Hospital)</b>	<b>2007 Median (Percentage of Nurses per Hospital)</b>	<b>2006 Median (Percentage of Nurses per Hospital)</b>
<b>Specialty RNs</b>			
Clinical Nurse Specialist	0 – 2.88	.18%	0%
Nurse Practitioner	0 – 10.01	.64%	1%
Physician Assistant	0 – 37.5	0%	0%
Certified in Any Specialty	0 – 35.07	9.42%	16.5%
<b>Education Level in Nursing</b>			
Associates Degree (ADN)	13.64 - 100	41.83%	45.5%
Bachelors Degree (BSN)	0 - 100	40.14%	49%
Masters Degree (MSN)	0 – 9.09	4.72%	5%
PhD	0 - .59	0%	0%

## RNs Dominate Staffing Mix

Annual staffing mix data were collected as the percentage of productive nursing time worked by nursing staff in each nursing category: RNs, LVNs, and Patient Care Assistants (see specification of measures in Appendix Table 3). See Appendix Table 4 for the number of reporting hospitals, medians and ranges.

In general, RNs have consistently provided the majority percentage of productive time (about 68%) and LVNs the least percentage of productive time. In 2007, Patient Care Assistants provide a percentage of time that is much greater than LVNs, a significant change from 2006. Ranges for each nursing category show that there is considerable variation among hospitals in terms of staffing plans.

**Staffing Mix by Productive Time  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**

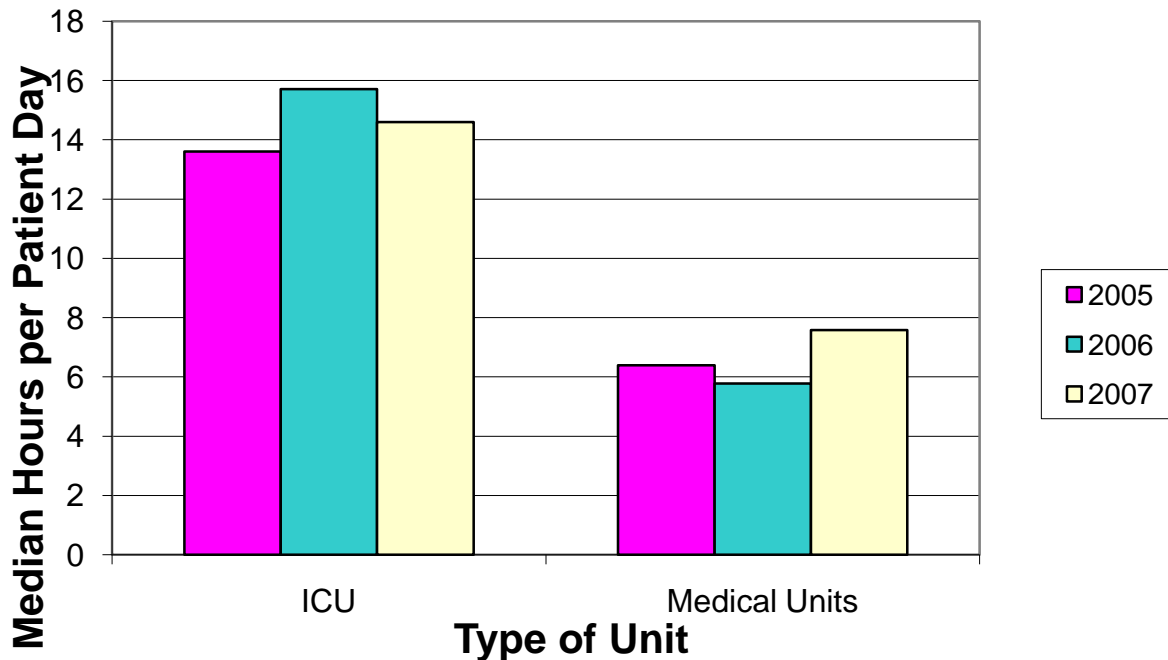


## Patient Care Nursing Hours per Patient Day

Annual patient care nursing hours per patient day (HPPD) was collected in the survey for both ICU and medical units (see specification of measures in Appendix Table 3). These are direct hours of nursing care that are patient-related, including nursing activities that occur away from the patient (e.g., care coordination, documentation time, treatment planning). However, they do not include indirect hours, nonproductive time, or all paid hours (e.g., it does not include vacation, sick time, orientation, education leave, or committee time if another staff member replaces the nurse). Data on HPPD have been collected since 2005. See Appendix Table 4 for the number of reporting hospitals, medians and ranges. Less than one-third of participating hospitals reported data in 2007.

Median HPPD have decreased slightly for ICUs and increased slightly for medical units since 2006. As expected, the median HPPD in ICUs is two to three times greater than the median in medical units. Appendix Table 4 reveals that the ranges on these hours are very large. The range for ICU varies from 11.3 to 28.2 HPPD, while the range on medical units varies from 3.6 to 18.3 HPPD.

**Nursing Hours Per Patient Day by ICU and Medical Units  
Reported by Hospitals in the Gulf Coast Region  
2005-2007**

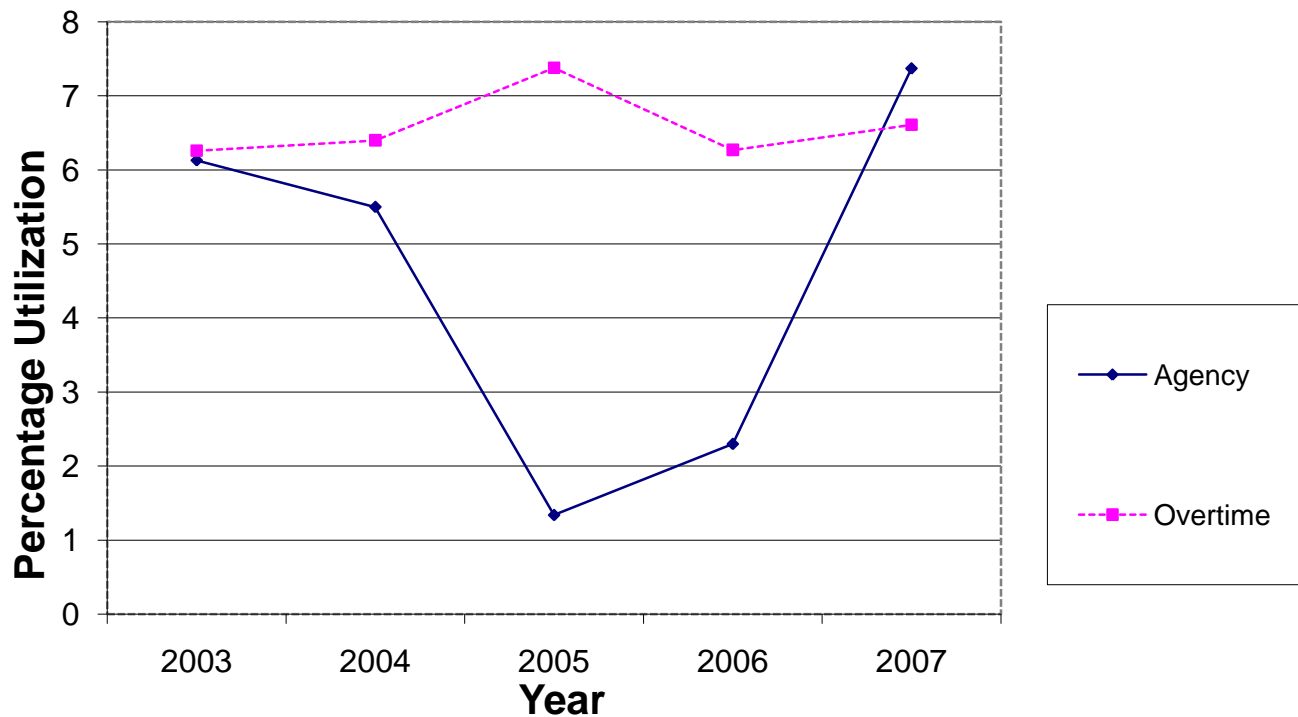


## Agency and Overtime Utilization Increase

Agency and overtime utilization data were collected in the survey on an annualized basis. Each hospital reported these data as percentages of productive time for all RNs (see specification of measures in Appendix Table 3). See Appendix Table 4 for the number of reporting hospitals, medians, and ranges. Half of participating hospitals provided this information.

From 2003 to 2006, agency use fell by nearly two-thirds. However, in 2007, agency use spiked sharply, more than tripling in just one year. In addition, overtime use increased slightly from the 2006 level. The 2007 median for agency use (7.4% of productive hours) had fallen to about 2% in 2005 and 2006, but is now higher than the median for overtime use (6.6% of productive hours). In 2003, over 12.3% of RN productive time was accounted for by agency and overtime use. By 2006, these staffing methods accounted for only 8.5% of productive time, suggesting that other strategies were being used to solve staffing issues. The increases in 2007 indicate that overtime and agency hours account for nearly 14% of productive time. Appendix Table 4 shows that the ranges for agency and overtime utilization are very wide, indicating that there are substantial differences in hospitals' decisions to use these staffing strategies.

**Agency and Overtime Utilization as a Percent of Productive Time  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**



## Workers' Compensation and Lost Time Injuries

As in 2006, annual measures of workers' injuries were collected. Measures included OSHA back injuries per hours worked, compensation claims per hours worked, injury-caused paid days off per payroll days, injury-caused unpaid days off per payroll days, and needlestick injuries per hours worked (see specification of measures in Appendix Table 3). Data are reported as the rate per 10,000 units. Approximately one-third of the hospitals provided this information.

The median percentage of employee injuries is extremely low, however, the ranges are very large. Appendix Table 4 shows the number of hospitals reporting data for each measure.

### Workers' Compensation and Lost Time Injuries Reported by Hospitals in the Gulf Coast Region 2006-2007\*

	<b>2007 Range</b>	<b>2007 Median</b>	<b>2006 Median</b>
<b>OSHA Reportable Back Injuries per Hours Worked</b>			
Nurses	0 – 10.65	.08	.14
All Employees	0 – 9.15	.08	7.15
<b>Workers' Compensation Claims per Hours Worked</b>			
Nurses	0 – 28.29	.81	.37
All Employees	0 – 756.0	.55	.84
<b>Workers' Compensation Claims with Paid Days Off per Payroll Days</b>			
Nurses	0 – 191.78	1.0	6.05
All Employees	0 – 6794.52	15.81	383.56
<b>Unpaid Days Off Due to Injury per Payroll Days</b>			
Nurses	0 – 62.0	0	0
All Employees	0 – 67.0	0	0
<b>Nurses' Needlestick Injuries per Hours Worked</b>	0 – 17.43	.10	.33

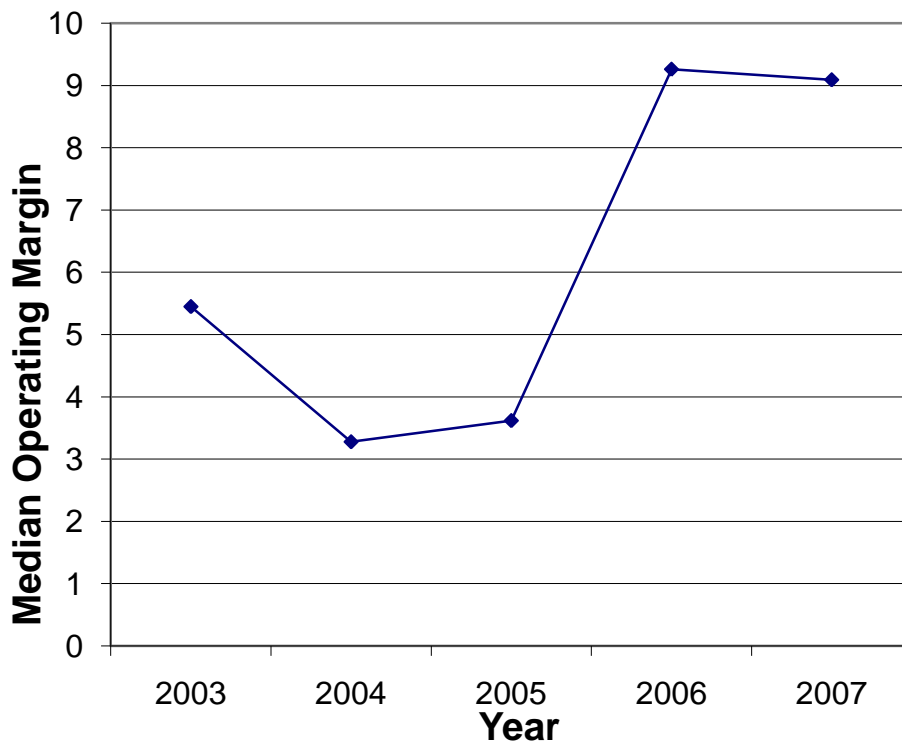
\* Data reported as rate per 10,000 units.

## Operating Margin Remains Stable

Annual operating margin data were collected in the survey. Each hospital reported their operating margin for their most recent year-end data (see specification of measures in Appendix Table 3). See Appendix Table 4 for the number of reporting hospitals, medians and ranges.

Less than half of the hospitals reported their operating margin, a slightly smaller percentage than in other years. The 2007 median operating margin remained near the same level as in 2006. This is nearly twice the previous 2003 high of 5.5%. However, Appendix Table 4 shows that there was an incredibly wide range of performance reported, with operating margins varying from -20.36% to 43.0%.

**Operating Margin  
Reported by Gulf Coast Hospitals  
2003-2007**



## Patient Outcome Data Are Widely Variable

Annual data on a variety of patient outcomes measures were collected in the survey. Over the years of the survey, more measures have been added. Measures include medication errors per number of medication doses, ICU central line infections per number of ICU central line days, hospital acquired ventilator pneumonias per number of ventilator days, number of post-operative wound infections per number of surgical cases, number of inpatient falls per number of inpatient days, and number of inpatient falls with injuries per number of inpatient days (see specification of measures in Appendix Table 3). Data are reported as the rate per 10,000 units. More than half of the hospitals provided this information (see Appendix Table 4 for the number of reporting hospitals).

The wide fluctuations in these measures from 2003-2007 highlight the difficulty of comparing data across and among hospitals. Each hospital collects and reports its own data differently for internal purposes. It is important to use caution in reaching conclusions based on such a diverse data set.

### Patient Outcome Measures Reported by Hospitals in the Gulf Coast Region 2003-2007\*

	<b>Range 2007</b>	<b>Median 2007</b>	<b>Median 2006</b>	<b>Median 2005</b>	<b>Median 2004</b>	<b>Median 2003</b>
<b>Medication Errors per Medication Doses</b>	0 – 37.44	1.91	5.2	20	5	600
<b>ICU Central Line Infections per ICU Central Line Days</b>	0 – 50.4	13.96	97	64	6,000	12,800
<b>Hospital Acquired Ventilator Pneumonias per Ventilator Days</b>	0 – 13,000	5.42	20	107	390	NA
<b>Post- Op Wound Infections per Surgical Cases</b>	0 – 4,700	54.78	2,350	2,700	5,000	NA
<b>Inpatient Falls per Inpatient Days</b>	0 – 12,000	23.19	100	NA	NA	NA
<b>Inpatient Falls with Injuries per Inpatient Days</b>	0 – 26.6	3.80	9.5	NA	NA	NA

\* Data reported as rate per 10,000.

NA = Data not available for those years

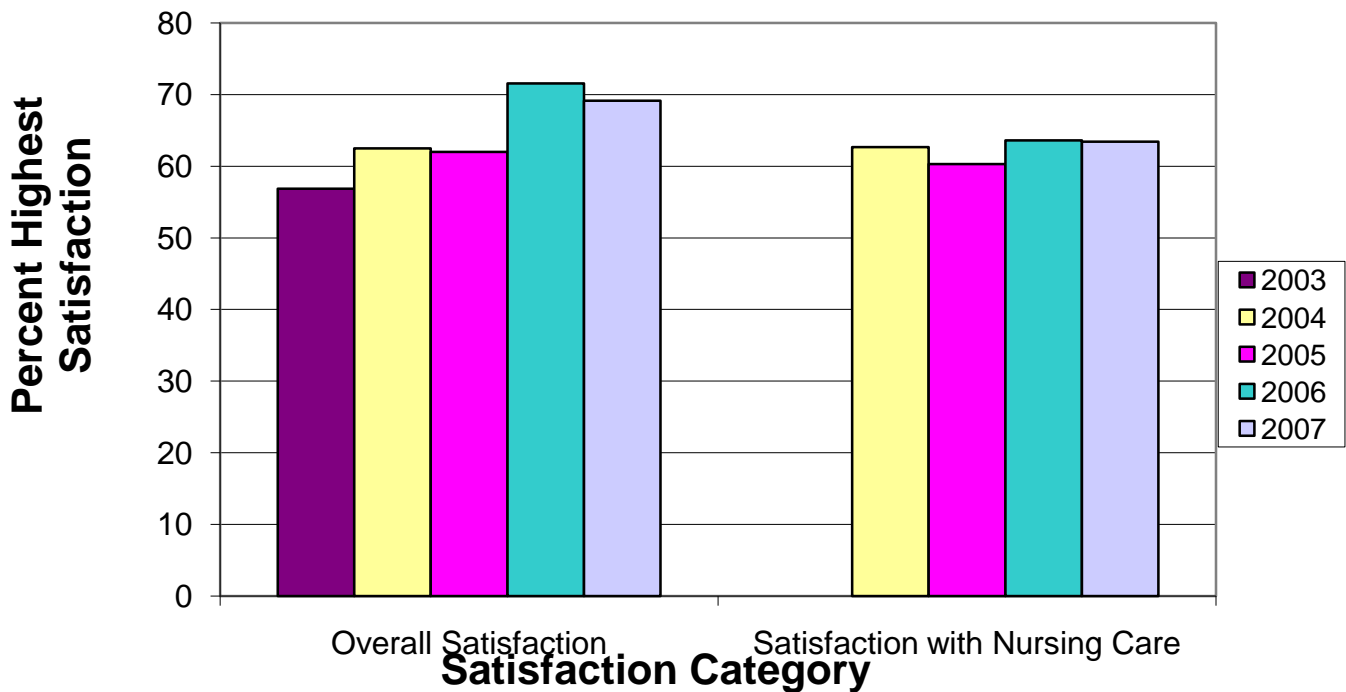
## Patient Satisfaction Continues to be High

Hospitals reported patient satisfaction data for the most recent period they had available at the time of the survey, which could be for a quarter or a year. Measures included the percentage of patients reporting the highest level of overall satisfaction with the most recent hospital encounter, the percentage of patients reporting the highest level of satisfaction with nursing care, and the average patient satisfaction rating. Satisfaction with nursing care was not measured in 2003, but was added by the WEW in 2004 (see specification of measures in Appendix Table 3).

The measure of percentage of patients reporting the highest level of overall satisfaction is the percent of all scores that were the highest possible rating (e.g. the percent of 5's received from patients on a 5-point scale). The average overall patient satisfaction score is the average of all responses –including all scores from highest to lowest. In order to compare average patient satisfaction ratings among hospitals using different measures, information was collected on the rating scales used and reported values were converted to the most commonly used scale, a five-point scale. See Appendix Table 4 for the number of reporting hospitals, medians and ranges. More than half of the hospitals provided patient satisfaction data.

The 2007 median value for overall satisfaction remains high, but fell slightly from 71.5% in 2006 to 69.2% in 2007. Ratings of satisfaction with nursing care have shown little change over the last four years. In 2007, there is nearly a 6% gap between ratings of overall satisfaction and ratings of satisfaction with nursing care. Appendix Table 4 shows that hospitals reported a wide range of satisfaction ratings.

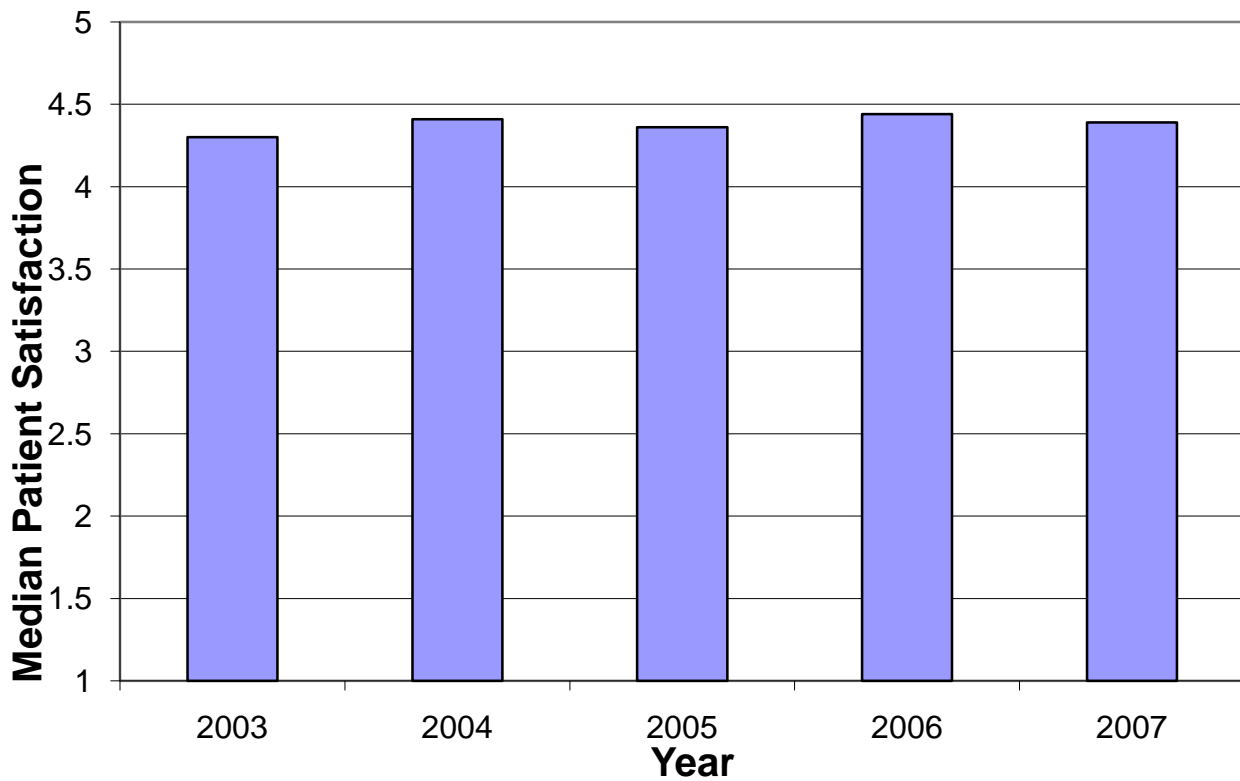
**Percentage of Patients Reporting the Highest Level of Satisfaction  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**



## Patient Satisfaction *continued*

The median values for average overall patient satisfaction ratings are also high and have remained relatively stable over the last four years. (The measurements recorded on the chart below are the median scores from reporting hospitals' annual average overall patient satisfaction ratings from 2003 to 2007).

**Average Overall Patient Satisfaction Ratings  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**



## Nursing Staff Satisfaction is Generally Positive

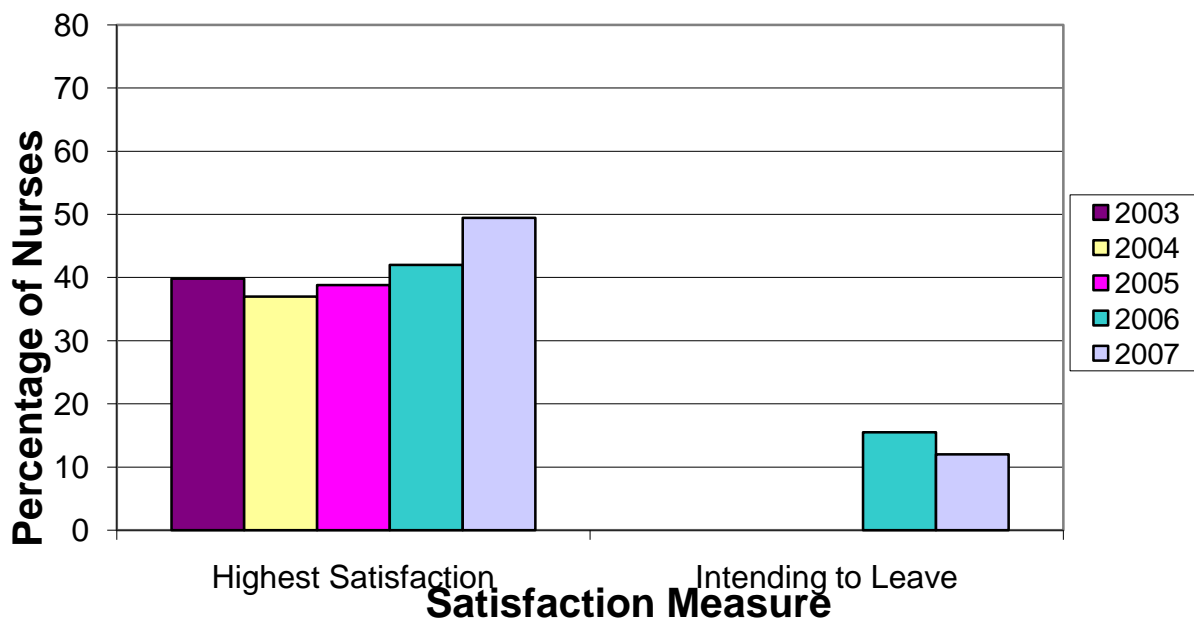
Hospitals reported annual nursing staff satisfaction data for the most recent period they had available at the time of the survey. Hospitals were asked to report data if they already had these measures on their current employee opinion surveys. They were not asked to have staff complete special opinion surveys. These types of questions are common to many pre-packaged or custom surveys, however the actual wording of the question may have differed among hospitals. Therefore, these data should be interpreted as a generalized indicator of nurse satisfaction.

Measures included the percentage of nursing staff reporting the highest level of overall satisfaction, the percentage of nursing staff intending to leave the hospital during the next year, the average nurse job satisfaction rating, the average nurse satisfaction with their supervisor, and the average nurse satisfaction with physician working relationships (see specification of measures in Appendix Table 3). Three of these measures were new to the survey in 2006: average nurse satisfaction with their supervisor, average satisfaction with physician relationships, and percentage intending to leave the hospital. In order to compare average nurse satisfaction ratings among hospitals using different measures, information was collected on the rating scales used and reported values were converted to the most commonly used scale, a five-point scale. See Appendix Table 4 for the number of reporting hospitals, medians and ranges. Approximately half of the hospitals provided nurse satisfaction data on most of the measures.

A high median percentage of nurses selected the highest rating possible in overall job satisfaction in all four years, culminating in a high of 49% in 2007. Appendix Table 4 shows the range of ratings for different hospitals, which extends from 20% to 98%.

A median of 12% of nurses indicated that they intended to leave their hospital with in the next year, down from 15% in 2006. The range on this question was very wide, from 0% to 23%.

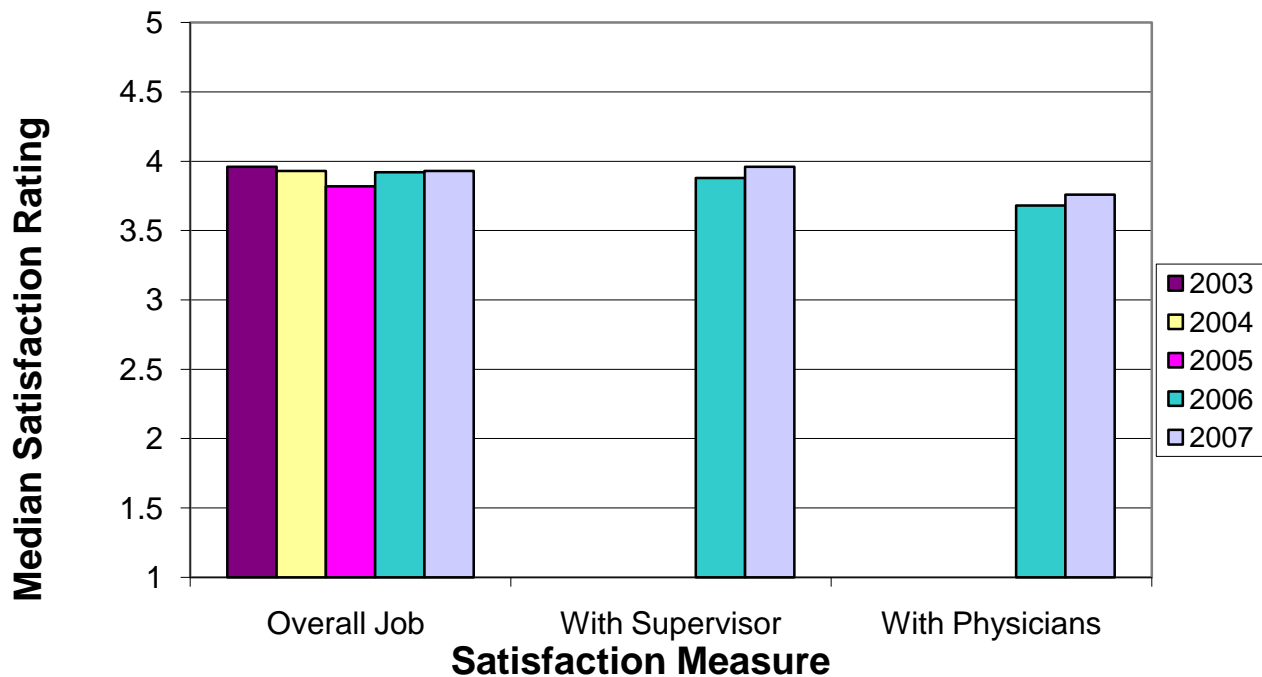
**Percentage of Nursing Staff Indicating Highest Satisfaction or Intention to Leave  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**



## Nursing Staff Satisfaction *continued*

Median average satisfaction ratings were above the mid-point for nurses in all years on all measures. Ratings increased slightly in 2007. The measures of satisfaction with supervisor and physicians had median values within .5 of a scale point of overall job satisfaction in 2007.

**Average Nurse Satisfaction with Overall Job, Supervisor\*, and Physician Relationships\*  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**



\* Measures collected for the first time in 2006.

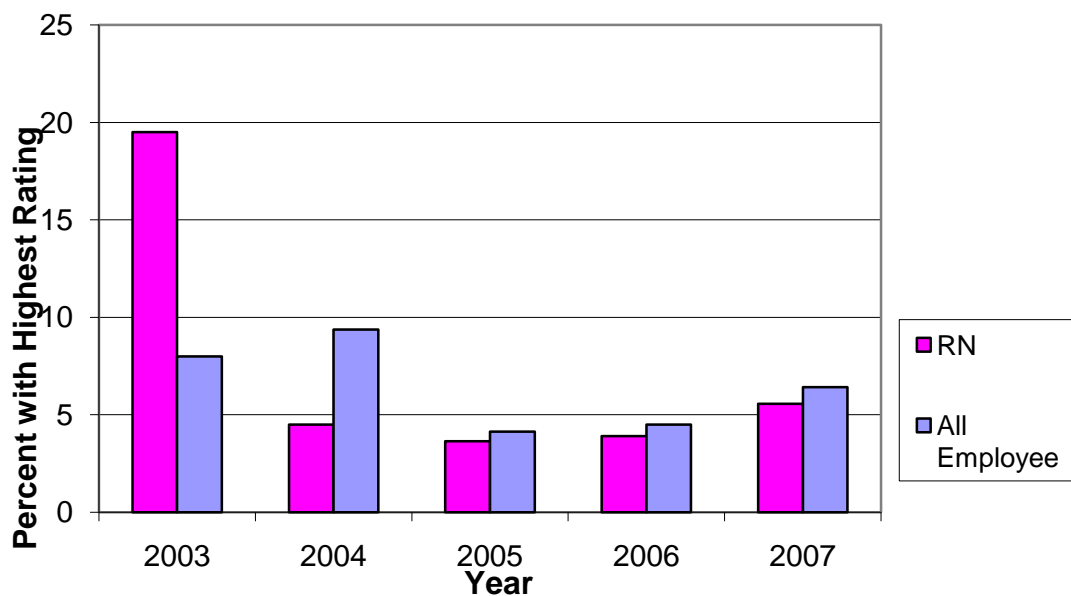
## Performance Appraisal Ratings Show Differences

Hospitals reported annual performance appraisal data for the most recent period they had available at the time of the survey. Performance appraisal systems, including the types of criteria assessed and rating systems, vary greatly among hospitals. They also differ in terms of severity or leniency in applying the rating system. Leadership in some hospitals supports many employees achieving very high ratings, while others believe that high ratings are for only the very highest achievers. Therefore, this data should be interpreted as a generalized indicator of nurse performance.

Measures included the percentage of nursing staff earning the highest possible overall performance appraisal rating, the percentage of all employees earning the highest possible overall performance appraisal rating, the average nurse performance appraisal rating, and the average all employee performance appraisal rating (see specification of measures in Appendix Table 3). In order to compare average performance appraisal ratings among hospitals using different measures, information was collected on the rating scales used and reported values were converted to the most commonly used scale, a five-point scale. See Appendix Table 4 for the number of reporting hospitals, medians and ranges. Eighty percent of the hospitals provided performance appraisal data on most of the measures.

Although RNs had much higher performance appraisal ratings than all employees when this survey began in 2003, the trend has changed in the past four years, with all employee ratings staying slightly higher than RN ratings. Ratings for both groups have increased slightly since they both experienced their five-year lows in 2005. The median percentage of RNs who have received the highest possible performance appraisal ratings decreased from a high of 19% in 2003 to values near 5% in the last four years. Similarly, the median percentage of all employees who received the highest possible performance appraisal ratings have been climbing from a low of 4.1% in 2005 to 6.4% in 2007. Appendix Table 4 shows an extremely wide range for these ratings.

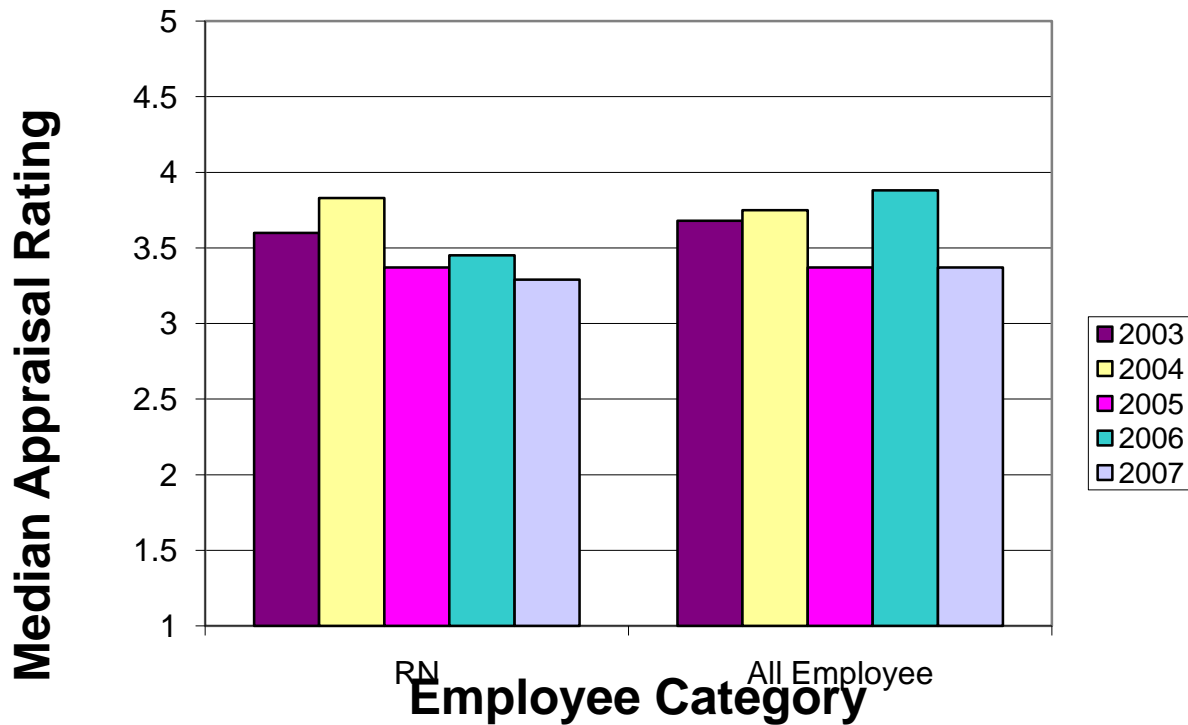
**Percentage of RNs and All Employees  
Earning the Highest Possible Overall Performance Appraisal Ratings  
Reported by Hospitals in the Gulf Coast Region  
2003 - 2007**



## Performance Appraisal *continued*

Median average performance appraisal ratings were above mid-point (3 on a 5 point scale) for nurses and all employees in all years. Both the RN and all employee average performance appraisal ratings decreased in 2007 to near 3.3%. Appendix Table 4 shows a wide range for these ratings.

**Average Performance Appraisal Ratings  
Reported by Hospitals in the Gulf Coast Region  
2003-2007**



## Summary

Results from the 2007 survey reveal some significant changes from outcomes in previous years. Time will tell if these are simply anomalies or the beginning of new trends.

This is most evident in the RN data related to retention:

- RN general turnover increased 4 percentage points from 2006 to 2007 after four consecutive years of decreases. The 2007 level is 2 percentage points higher than the rate in 2003.
- RN voluntary turnover increased 1 percentage point from 2006 to 2007 (first measured in 2006).
- RN retention decreased 1 percentage point after increasing from 83% in 2004 to 86.8% in 2006.
- RN vacancy rates continued to increase in 2007 at an accelerated rate, increasing 3 percentage points from 2006 to a level of 11.64%. From 2003 to 2005, RN vacancy rates ranged from 5.6% to 6.1%.
- RN vacancy/headcount ratios increased 2% in 2007, after increasing 4% from 2004 to 2006.

In addition, in 2007 RN agency usage increased 5 percentage points in just one year, with the current level higher than was reported in 2003. (During the previous four years, agency use had decreased.) Overtime use has fluctuated up and down within a 1 percentage-point range during the past five years, heading upward in 2007. Increases in use of these staffing strategies have resulted in those staffing methods accounting for nearly 14% of productive time.

Meanwhile, RN median age has remained stable at 40-41 for males and 43 for females and tenure has been relatively stable for RNs, indicating that long-term employees may be a relatively stable population. Use of RNs in the staffing mix has also remained at about 68% over the past three years, showing that RNs are not being displaced by other job categories.

The number of nursing staff giving hospitals the highest rating of job satisfaction has increased in the last four years, to a high of 50% in 2007. Those nurses stating that they intend to leave their hospital employment during the next year decreased to 12% in 2007 from 15.5% in 2006. The number of nurses receiving the highest performance appraisal rating has increased 2% in the last year, although the average rating has dropped slightly.

All employee turnover rates have also increased, along with vacancy rates, in a pattern similar to RNs. Turnover rates for LVN, NP/PA, and other licensed staff have increased while retention has decreased. Vacancy rates for NP/PA have increased slightly, but vacancy rates for LVN and other licensed staff have decreased.

As predicted, it appears that this region is beginning to experience growth in hospital workforce demand that has not been matched by growth in the employee base. This situation can lead to a strained work environment as staff members try to maintain quality.



## **Appendices**

**Table 1**  
**Comparison of Hospitals and Hospital Beds in the Region to**  
**Participants in the Work Environment Survey 2007**

	<b>All Hospitals in Region</b>	<b>Participating Hospitals</b>	<b>Participants as Percentage of Region</b>
<b>Number of Beds</b>			
<b>Total</b>	20,368	13,425	65.1
<b>Disproportionate Share</b>	6,827	4,288	62.8
<b>Bed Size Distribution</b>			
<b>1-49</b>	35	10	28.6
<b>50-99</b>	30	4	13.3
<b>100-149</b>	16	6	37.5
<b>150-249</b>	13	7	53.8
<b>250-500</b>	12	9	75.0
<b>500 +</b>	12	10	83.3
<b>Number of Hospitals</b>			
<b>Non-Disproportionate Share Hospitals</b>	92	33	35.9
<b>Disproportionate Share Hospitals</b>	26	13	50.0
<b>Hospital Service Distribution</b>			
<b>General</b>	69	35	50.7
<b>LTAC</b>	23	1	4.3
<b>Cancer</b>	1	1	100.0
<b>OB GYN</b>	1	1	100.0
<b>Pediatric</b>	5	4	80.0
<b>Psychiatric</b>	7	2	28.6
<b>Rehabilitation</b>	5	1	20.0
<b>Specialty Surgery</b>	7	1	14.3
<b>Hospital Ownership Types</b>			
<b>Corporation</b>	23	5	21.7
<b>Government</b>	16	10	62.5
<b>Non-Profit/Christian</b>	9	7	77.8
<b>Non-Profit/ Non-Christian</b>	20	15	75.0
<b>Partnership</b>	50	8	16.0

**Table 2**  
**Work Environment Workgroup Members**

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>
Co-Chair: Kathy Shingleton	Vice President of Human Resources and Employee Services	University of Texas Medical Branch
Elaine J. Barber	Senior Vice President	Greater Houston Partnership
Rachel Caillouet	Vice President, Human Resources	Baylor College of Medicine
Terri Carter	Director of Human Resources	St. Luke's Episcopal Health System
Lynn Clements	Human Resources Director	Shriners Hospitals for Children
Cheryl C. Day	Director of Women's, Infants', Children's and Behavioral Medicine	University of Texas Medical Branch
Susan M. Distefano	Senior Vice President and Chief Nursing Officer	Texas Children's Hospital
Scott Doak	Chief Human Resources Officer	Spring Branch Medical Center
Nancy Edgar	Vice President, Human Resources	HCA Gulf Coast Division
Gerald Goodman	Associate Professor, Health Care Administration	Texas Woman's University
Lou Gould	Chief Human Resources Officer	Harris County Hospital District
Carole Hackett	Vice President, Human Resources	The Methodist Hospital
Barbara Hayley	Chief Executive Officer	Hayley Ranch Consulting
Viola Hebert	Director of Nursing Programs and Workforce Development	Harris County Hospital District
Victoria King	Chief Patient Care Officer	Memorial Hermann Southwest

Johnie Leonard	Director, Emergency Department	The Methodist Hospital
Larry Livengood	Area Director of Human Resources	Kindred Hospitals - South Texas
Debbie Mahannah	Assistant Vice President for Human Resources	St. Luke's Episcopal Hospital
Cathy Moniaci	Chief Nursing Officer	Shriners Hospitals for Children-Houston
Tabitha Rice	Assistant Vice President	Texas Children's Hospital
Lauren Rykert	Sr. Vice President, Human Resources	The Methodist Hospital
Rosa Semien	Planning & Development	UT M D Anderson Cancer Center
Anne Speed	Chief Human Resources Officer	Baylor Clinic and Hospital
Trudi Stafford	Chief Patient Care Officer	Memorial Hermann Southeast
Barbara Summers	Chief Nursing Officer	UT M D Anderson Cancer Center
Shibu Varghese	Chief Human Resources Officer	UT M D Anderson Cancer Center
Bonnie Weisman	International Services	Baylor College of Medicine
K. Lynn Wieck	Jacqueline M Braithwaite Professor CEO	UT Tyler College of Nursing, Management Solutions for Healthcare
Mary Koch	Health Services Industry Liaison	Workforce Solutions
Donde Batten	Consultant	Batten Consulting

**Table 3**  
**Specifications of Work Environment Survey Measures**

<b>Measure</b>	<b>Measure Formula and Guidelines</b>	<b>Source of Measure</b>
General Turnover Rate for Full-Time Employees	Hospitals report annual turnover data for actions taking place between 01/01/07 and 12/31/07. Hospitals report data only for hospital employees, full-time, not including research entities, academic organizations, or other subsidiary organizations. They exclude contract or agency staff members not on the hospital's payroll. Hospitals report headcounts at the beginning and end of the year, rather than FTEs. "Headcount" refers to the number of individuals (full-time) on the hospital's payroll. "Terminations" refers to the number of individuals (full-time) deleted from the hospital's payroll for any reason (voluntary or involuntary) including transfers to another hospital within a multi-hospital system. The turnover formula is: (the number of terminations) divided by the average of (headcount the previous year + headcount the current year).	Saratoga
Voluntary Turnover Rate for Full-Time Employees	Hospitals report annual voluntary turnover data for actions taking place between 01/01/07 and 12/31/07. Hospitals report data only for hospital employees, full-time, not including research entities, academic organizations, or other subsidiary organizations. They exclude contract or agency staff members not on the hospital's payroll. Hospitals report headcounts at the beginning and end of the year, rather than FTEs. "Headcount" refers to the number of individuals (full-time) on the hospital's payroll. "Terminations" refers to the number of individuals (full-time) deleted from the hospital's payroll for any reason (voluntary or involuntary) including transfers to another hospital within a multi-hospital system. Voluntary turnover excludes separation due to death, illness, pregnancy, relocation, retirement, performance or discipline, cutbacks due to mergers, cyclical layoffs, permanent reductions in force, per diem, consultants, temporary or agency status, and students in training. The turnover formula is: (the number of	Saratoga calculations, NQF exclusions

Measure	Measure Formula and Guidelines	Source of Measure
	terminations) divided by the average of (headcount the previous year + headcount the current year).	
Retention Rate for Full-Time Employees	Hospitals report annual retention data for an annual period beginning 01/01/07 and ending 12/31/07. Hospitals report data only for hospital employees, full-time, not including research entities, academic organizations, or other subsidiary organizations. They exclude contract or agency staff members not on the hospital's payroll. Hospitals report headcounts at the beginning and end of the year, rather than FTEs. "Headcount" refers to the number of individuals (full-time) on the hospital's payroll. "Total Employees" includes all full-time staff that work in the hospital. Hospitals report the total number of employees on staff in each job category for the time period beginning 01/01/07. Hospitals report the total number from that specific group who remain on staff at the end of the time period ending 12/31/07. For example, a hospital reports 100 nurses on staff as of January 1, 2007. Of these nurses, 80 remain on staff on December 31, 2007.	Saratoga
Vacancy Rate for Full-Time Employees – Using Budgeted Positions	Hospitals report vacancy data for 12/31/07. Hospitals report data only for hospital employees, full-time, not including research entities, academic organizations, or other subsidiary organizations. They exclude contract or agency staff members not on the hospital's payroll. Hospitals report the number of budgeted positions and the number of vacancies in budgeted positions as of 12/31/07. The vacancy rate formula is: (the number of vacancies in budgeted positions) divided by (the number of budgeted positions).	Bureau of Labor Statistics
Vacancy Rate for Full-Time Employees – Using Headcount	Hospitals report vacancy data for 12/31/07. Hospitals report data only for hospital employees, full-time, not including research entities, academic organizations, or other subsidiary organizations. They exclude contract or agency staff members not on the hospital's payroll. Hospitals report headcount (not FTEs) on 12/31/07 and the number of vacancies in budgeted positions as of 12/31/07. "Headcount" refers to the number of individuals (full-time) on	Bureau of Labor Statistics

Measure	Measure Formula and Guidelines	Source of Measure
	the hospital's payroll. The vacancy rate formula is: (the number of vacancies in budgeted positions) divided by the headcount.	
Ethnicity	Hospitals report ethnicity data for full-time and part-time employees as of 12/31/07. They do not include employees in research entities, academic organizations, or other subsidiary organizations. All requested information is for headcount, not FTEs.	Bureau of Labor Statistics
Gender	Hospitals report gender data for full-time and part-time employees as of 12/31/07. They do not include employees in research entities, academic organizations, or other subsidiary organizations. All requested information is for headcount, not FTEs.	Bureau of Labor Statistics
Average Age	Hospitals report gender data for full-time and part-time employees as of 12/31/07. They do not include employees in research entities, academic organizations, or other subsidiary organizations. All requested information is for headcount, not FTEs. "Average Age" means the average of the ages of all employees in that category. For example, the average age of all female RNs may be 42.5 years.	Bureau of Labor Statistics
Tenure	Hospitals report years of service and headcount for employees as of 12/31/07. Hospitals report data only for hospital employees, not including research entities, academic organizations, or other subsidiary organizations. They exclude contract or agency staff members not on the hospital's payroll. Hospitals report headcounts rather than FTEs. "Headcount" refers to the number of individuals on the hospital's payroll. The tenure formula is: (the number of years of service) divided by the headcount.	Bureau of Labor Statistics
Percentage of Nurses with Specialty Certification	Hospitals report data as of 12/31/07. They report data only for hospital employees, full-time and part-time, and do not include employees of research entities, academic organizations, or other subsidiary organizations. Hospitals do not include contract or agency staff not on the hospital's payroll. Hospitals report headcount, not FTEs. "Headcount" refers to the number of individuals on the hospital's payroll. The formula for percentage of RNs in each specialty is: (the number of nurses in a given specialty)	Texas Board of Nurse Examiners

Measure	Measure Formula and Guidelines	Source of Measure
Percentage of Nurses at Education Level	<p>divided by the total number of RNs.</p> <p>Hospitals report data as of 12/31/07. They report data only for hospital employees, full-time and part-time, and do not include employees of research entities, academic organizations, or other subsidiary organizations. Hospitals do not include contract or agency staff not on the hospital's payroll. Hospitals report headcount, not FTEs. "Headcount" refers to the number of individuals on the hospital's payroll. The formula for percentage of RNs at each education level is: (the number of nurses in a given level) divided by the total number of RNs.</p>	Texas Board of Nurse Examiners
Staffing Mix	<p>Staffing mix is calculated by dividing the number of hours of productive time for each group of employees (RN, LVN, Patient Care Assistant) by the sum of productive hours for these three employee groups. Hospitals include all staff (employed, contract, and traveler), with direct patient care responsibilities. Hospitals report annual data, measured between specified dates, including the number of hours of RN productive time, the number of hours of LVN productive time, the number of hours of Patient Care Assistant (PCA) productive time, and the number of total hours of RN/LVN/PCA productive time. PCAs are unlicensed assistive personnel.</p>	American Nurses Association - National Database of Nursing Quality Indicators
Nursing Hours Per Patient Day for ICU and Medical Units	<p>Hospitals report data as of 12/31/07. Only productive hours are used; productive hours are direct hours of nursing care that are patient-related, including nurse activities that occur away from the patient (e.g., care coordination, documentation time, treatment planning). They do not include indirect hours, nonproductive time, or all paid hours (e.g., sick time, vacation, orientation, education leave). They also do not include committee time if the staff person is replaced by another direct provider. The formula for HPPD is: the total number of direct nursing care hours divided by the patient census for the same 24 hours.</p>	American Nurses Credentialing Center, Magnet Quality Indicator, American Nurses Association's <i>Scope and Standards for Nurse Administrators</i> (2003)
Agency Utilization	<p>Agency usage is calculated by dividing the total RN agency hours worked (including contract and traveler RNs) by the number of productive hours employed RNs worked (all RN hours including</p>	American Nurses Association - National Database of Nursing Quality Indicators

Measure	Measure Formula and Guidelines	Source of Measure
	contract and traveler RNs). Data is measured annually between 01/01/07 and 12/31/07.	
Overtime Utilization	Overtime usage is calculated by dividing the total productive RN overtime hours worked (including contract and traveler RNs) by the number of productive hours employed RNs worked (all RN hours including contract and traveler RNs). Data is measured annually between 01/01/07 and 12/31/07.	Department of Labor
Percentage of OSHA Reportable Back Injuries	Hospitals use a prescribed formula to calculate the percentage of annual reported back injuries for data collected between 01/01/07 and 12/31/07. The formula is: number of OSHA reportable back injuries divided by the number of hours worked.	Department of Labor
Percentage of Workers' Compensation Claims	Hospitals use a prescribed formula to calculate the percentage of annual workers' compensation claims for data collected between 01/01/07 and 12/31/07. The formula is: number of workers' compensation claims divided by the number of hours worked. Figures are calculated for all claims and for claims with paid days off due to injury.	Department of Labor
Percentage of Unpaid Days Off Due to Injury	Hospitals use a prescribed formula to calculate the percentage of annual unpaid days off due to injury for data collected between 01/01/07 and 12/31/07. The formula is: number of unpaid days off due to injury divided by the number of total payroll days.	Department of Labor
Percentage of Needlestick Injuries	Hospitals use a prescribed formula to calculate the percentage of annual nurse needlestick injuries for data collected between 01/01/07 and 12/31/07. The formula is: number of needlestick injuries divided by the total number of hours worked.	Centers of Disease Control and Prevention
Operating Margin	Hospitals report their operating margins for the previous year-end data. Hospitals either use the most recent year-end of December 31 or August 31, depending whether they are using a calendar or academic cycle. Revenue is defined as exclusive of investment, interest, and other non-patient care income. The formula for operating margin is: (net revenue minus expenses) divided by net revenue.	Hospitals use a variety of accounting methods to accrue this data
Medication Error Rate	Hospitals use a prescribed formula to calculate medication error rate for data collected between	JCAHO Comprehensive Accreditation Manual for

Measure	Measure Formula and Guidelines	Source of Measure
	01/01/07 and 12/31/07. The formula is the total number of medication errors divided by the total number of medication doses. Totals include all patients.	Hospitals, 2005
ICU Central Line Catheter- Associated Blood Stream Infection Rate	Hospitals use a prescribed formula to calculate the annual ICU central line infection rate for data collected between 01/01/07 and 12/31/07. The formula is the total number of ICU central line infections divided by the total number of ICU of central line days. Totals include all ICU patients.	Centers for Disease Control and Prevention
Ventilator-Associated Pneumonia Rate	Hospitals use a prescribed formula to calculate the annual ventilator pneumonia rate for data collected between 01/01/07 and 12/31/07. The formula is the total number of hospital-acquired ventilator pneumonias divided by the total number of ventilator days. Totals include all patients.	Centers for Disease Control and Prevention
Surgical Site Infection Rate	Hospitals use a prescribed formula to calculate the annual surgical site infection rate for data collected between 01/01/07 and 12/31/07. The formula is the total number of post-op wound infections divided by the total number of surgical cases. Totals include all post-op patients.	Centers for Disease Control and Prevention
Falls Prevalence Rate	Hospitals use a prescribed formula to calculate the annual falls prevalence for data collected between 01/01/07 and 12/31/07. The formula is the total number of inpatient falls divided by the total number of inpatient days. Totals include all patients.	American Nurses Association - National Database of Nursing Quality Indicators
Falls Prevalence with Injuries Rate	Hospitals use a prescribed formula to calculate the annual falls with injuries for data collected between 01/01/07 and 12/31/07. The formula is the total number of inpatient falls with injuries divided by the total number of inpatient days. Totals include all patients.	American Nurses Association - National Database of Nursing Quality Indicators
Percentage of Patients Reporting the Highest Level of Overall Satisfaction	Hospitals report patient satisfaction data for the most recent period available. They report the percentage of patients reporting the highest level of overall satisfaction with the most recent hospital encounter on the patient satisfaction survey. All hospitals report data in which the final collection occurs in the current year. The majority of hospitals report data collected for 9-12 months.	Hospitals use a variety of proprietary instruments by firms such as Press Ganey
Percentage of Patients Reporting	Hospitals report patient satisfaction data for the most recent period available. They report the	Hospitals use a variety of proprietary instruments by

Measure	Measure Formula and Guidelines	Source of Measure
the Highest Level of Satisfaction with Nursing Care	percentage of patients reporting the highest level of satisfaction with nursing care on the most recent hospital encounter on the patient satisfaction survey. All hospitals report data in which the final collection occurs in the current year. The majority of hospitals report data collected for 9-12 months.	firms such as Press Ganey
Average Patient Satisfaction Rating	Hospitals report patient satisfaction data for the most recent period available. They report the average patient satisfaction rating, the rating scale used in the patient satisfaction survey, the scale descriptor, and the period covered by the most recent patient satisfaction survey. Different rating scales are used among hospitals. In order to provide comparisons, most rating scales are converted from other scales (three-point, four-point, six-point or seven-point scales are used in the region) to a five-point scale. In the conversion, 1 is the lowest rating and 5 is the highest rating. All hospitals report data in which the final collection occurs in the current year. The majority of hospitals report data collected for 9-12 months.	Hospitals use a variety of proprietary instruments by firms such as Press Ganey
Percentage of Nurses Reporting the Highest Level of Job Satisfaction	Hospitals report nurse satisfaction data for the most recent period available and provide the dates of service covered by that survey. They report the percentage of nursing staff reporting the highest level of job satisfaction possible on the patient satisfaction survey. Nearly all hospitals report data in which the final collection occurred in the current year; if not there may be a one-year lag.	Hospitals use a variety of proprietary instruments by firms such as Press Ganey
Nurse Turnover Intention Rate	Hospitals report data for the most recent period available and provide the dates of service covered by that survey. Ideally, hospitals report data collected over a calendar year. If data for nurses only is not available, hospitals are asked to report data for the organization group that best reflected the nurses' opinions. Hospitals report the percentage of nurses rating regarding a positive intention to leave the hospital in the next year, the rating scale used in the employee survey and its descriptors, and the period covered by the survey. The formula is: number of RNs giving a positive response to intent to leave the hospital during the next year divided	Hospitals use a variety of proprietary instruments by firms such as Press Ganey

Measure	Measure Formula and Guidelines	Source of Measure
	by the number of RNs. Nearly all hospitals report data in which the final collection occurred in the current year; if not there may be a one-year lag.	
Average RN Overall Job Satisfaction Rating	Hospitals report data for the most recent period available and provide the dates of service covered by that survey. If data for RNs only is not available, hospitals are asked to report data for the organization group that best reflected the nurses' opinions. Hospitals report the average nurse job satisfaction rating, the rating scale used in the employee satisfaction survey and its descriptors, and the period covered by the survey. Different rating scales are used among hospitals. In order to provide comparisons, most rating scales were converted from other scales (three-point, four-point, six-point or seven-point scales are used in the region) to a five-point scale. In the conversion, 1 is the lowest rating and 5 is the highest rating. Nearly all hospitals report data in which the final collection occurred in the current year; if not there may be a one-year lag.	Hospitals use a variety of proprietary instruments by firms such as Press Ganey
Average RN Satisfaction with Supervisor Rating	Hospitals report data for the most recent period available and provide the dates of service covered by that survey. If data for RNs only is not available, hospitals are asked to report data for the organization group that best reflected the nurses' opinions. Hospitals report the average nurse satisfaction with supervisor rating, the rating scale used in the employee satisfaction survey and its descriptors, and the period covered by the survey. Different rating scales are used among hospitals. In order to provide comparisons, most rating scales were converted from other scales (three-point, four-point, six-point or seven-point scales are used in the region) to a five-point scale. In the conversion, 1 is the lowest rating and 5 is the highest rating. Nearly all hospitals report data in which the final collection occurred in the current year; if not there may be a one-year lag.	Hospitals use a variety of proprietary instruments by firms such as Press Ganey
Average RN Satisfaction with Physician Working Relationships Rating	Hospitals report data for the most recent period available and provide the dates of service covered by that survey. If data for RNs only is not available, hospitals are asked to report data	Hospitals use a variety of proprietary instruments by firms such as Press Ganey

Measure	Measure Formula and Guidelines	Source of Measure
	<p>for the organization group that best reflected the nurses' opinions. Hospitals report the average nurse rating of satisfaction with working relationships with physicians, the rating scale used in the employee satisfaction survey and its descriptors, and the period covered by the survey. Different rating scales are used among hospitals. In order to provide comparisons, most rating scales were converted from other scales (three-point, four-point, six-point or seven-point scales are used in the region) to a five-point scale. In the conversion, 1 is the lowest rating and 5 is the highest rating. Nearly all hospitals report data in which the final collection occurred in the current year; if not there may be a one-year lag.</p>	
<p>Percentage of Employees Earning the Highest Possible Overall Performance Rating</p>	<p>Hospitals report performance appraisal data for the most recent period available and provide the dates of service covered by that survey. They report the percentage of employees earning the highest possible overall performance rating. Nearly all hospitals report data in which the final collection occurred in the current year; if not there may be a one-year lag.</p>	<p>Each hospital's individual performance evaluation rating system</p>
<p>Average Employee Performance Evaluation Rating</p>	<p>Average performance appraisal ratings are submitted using each hospital's rating scale. Different rating scales are used among hospitals. In order to provide comparisons, most rating scales are converted from other scales (three-point, four-point, six-point or seven-point scales are used in the region) to a five-point scale. In the conversion, 1 is the lowest rating and 5 is the highest rating. All hospitals report data that was collected during the previous 12 months. All hospitals report at least 11 months of data.</p>	<p>Each hospital's individual performance evaluation rating system</p>

**Table 4**  
**Work Environment Survey Measures'**  
**Medians and Ranges 2002-2007**

Measure	Number Reporting 2007	Range 2007	Median 2007	Median 2006	Median 2005	Median 2004	Median 2003	Median 2002
<b>General Turnover (%)</b>								
All Employees	37	2.73 – 34.8	16.83	14.52	17.22	15.35	14.61	25.88
RN	38	0 – 71.43	16.84	12.80	14.26	14.56	14.78	23.38
LVN	38	0 – 66.67	20.87	18.18	NA	14.29	19.14	26.32
NP/PA	22	0 - 200	7.03	0	0	NA	NA	NA
Pharmacist	33	0 - 40	2.26	6.93	1.37	5.88	17.39	12.50
Other Licensed Staff	13	8.51 – 31.58	16.47	14.43	16.62	13.44	17.06	21.76
<b>Voluntary Turnover (%)</b>								
All Employees	31	1.75 – 28.17	12.14	11.66	NA	NA	NA	NA
RN	32	0 – 36.57	12.12	11.05	NA	NA	NA	NA
LVN	31	0 – 66.67	15.38	11.76	NA	NA	NA	NA
NP/PA	20	0 - 200	.96	3.18	NA	NA	NA	NA
Pharmacist	28	0 - 40	0	6.99	NA	NA	NA	NA
Other Licensed Staff	13	6.56 – 80.36	10.53	11.18	NA	NA	NA	NA
<b>Retention (%)</b>								
All Employees	30	74.87 – 98.41	86.14	85.63	83.58	82.85	NA	NA
RN	31	63 – 96.97	85.84	86.79	84.38	83.02	NA	NA
LVN	31	50 – 100	83.33	84.52	NA	81.25	NA	NA
NP/PA	19	0 – 100	77.78	100	89.66	NA	NA	NA
Pharmacist	27	50 – 100	100	100	98.74	85.33	NA	NA
Other Licensed Staff	11	80.95 – 94.64	87.8	90.61	85.57	95.35	NA	NA
<b>Vacancy – Budgeted (%)</b>								
All Employees	24	.35 – 18.76	5.98	5.31	3.96	3.61	3.87	NA
RN	25	.83 – 29.17	11.64	8.61	6.07	5.55	6.08	NA
LVN	24	0 – 33.33	0	3.23	NA	1.18	14.15	NA
NP/PA	15	0 – 100	6.12	3.23	0	NA	NA	NA
Pharmacist	20	0 – 100	2.42	0	0	0	14.29	NA
Other Licensed Staff	20	0 – 33.85	4.36	5.55	4.36	3.63	4.41	NA
<b>Vacancy – Headcount(%)</b>								
All Employees	24	.35 – 22.28	6.09	5.59	4.17	3.75	4.02	5.67
RN	25	.84 – 46.15	12.78	10.34	6.90	5.79	7.02	10.93

Measure	Number Reporting 2007	Range 2007	Median 2007	Median 2006	Median 2005	Median 2004	Median 2003	Median 2002
LVN	24	0 – 33.33	0	3.33	NA	1.28	10.91	4.88
NP/PA	14	0 – 100	3.26	3.23	0	NA	NA	NA
Pharmacist	20	0 – 100	2.43	0	0	0	9.09	0
Other Licensed Staff	11	0 – 23.38	3.20	5.29	1.23	3.54	4.48	6.64
<b>Average Age</b>								
All Employees								
Female	33	37.53 – 47.5	42.97	42.7	43	NA	NA	NA
Male	32	34.7 – 49	42.09	41.6	42	NA	NA	NA
<b>RN</b>								
Female	40	37.14 – 57	43.3	43	43	NA	NA	NA
Male	37	30 - 50	41.0	40.92	40	NA	NA	NA
<b>Tenure</b>								
All Employee	32	3 – 11.05	7.41	7.17	6.11	6.51	NA	NA
RN	33	2.67 – 25.21	6.83	6.68	5.88	6.63	NA	NA
<b>RN Specialties (%)</b>								
Clinical Nurse Spec.	15	0 – 2.88	.18	0	NA	NA	NA	NA
Nurse Practitioner	31	0 – 10.01	.64	1.0	NA	NA	NA	NA
Physician Assistant	27	0 – 37.5	0	0	NA	NA	NA	NA
Certified - Specialty	14	0 – 35.07	9.42	16.5	NA	NA	NA	NA
<b>RN Education (%)</b>								
ADN	12	13.64 – 100	41.83	45.5	NA	NA	NA	NA
BSN	14	0 – 100	40.14	49.0	NA	NA	NA	NA
MSN	11	0 – 9.09	4.72	5.0	NA	NA	NA	NA
PhD	7	0 – .59	0	0	NA	NA	NA	NA
<b>Staffing Mix (%)</b>								
RN	28	28.76 - 100	68.14	68.43	67.41	63.66	68.92	NA
LVN	26	.37 – 41.79	4.09	13.21	9.26	13.08	14.43	NA
Patient Care Asst.	27	2.12 – 52.42	25.04	17.27	18.50	21.84	20.31	NA
<b>Hours Per Patient Day</b>								
ICU	11	11.34 – 28.24	14.6	15.71	13.61	NA	NA	NA
Medical Units	15	3.6 – 18.3	7.58	5.78	6.39	NA	NA	NA
<b>Agency Utilization</b>	23	0 – 16.64	7.37	2.30	1.34	5.50	6.13	NA
<b>Overtime Utilization</b>	23	.55 – 13.99	6.61	6.27	7.38	6.40	6.26	NA
<b>Workers' Compensation / Lost Time *</b>								
OSHA Back Injuries <sup>4</sup>								
RN	15	0 – 10.65	.079	.135	NA	NA	NA	NA

<sup>4</sup> OSHA Reportable Back Injuries per Hours Worked

Measure	Number Reporting 2007	Range 2007	Median 2007	Median 2006	Median 2005	Median 2004	Median 2003	Median 2002
All Employee	17	0 – 9.15	.076	7.15	NA	NA	NA	NA
Workers' Comp. Claims <sup>5</sup>								
RN	14	0 – 28.29	.807	.365	NA	NA	NA	NA
All Employee	16	0 – 756	.545	.84	NA	NA	NA	NA
Workers' Comp. Claims w/Pay <sup>6</sup>								
RN	11	0 – 191.78	1.0	6.04667	NA	NA	NA	NA
All Employee	13	0 – 6794.52	15.81	383.561	NA	NA	NA	NA
Unpaid Days Off Due to Injury <sup>7</sup>								
RN	10	0 - 62	0	0	NA	NA	NA	NA
All Employee	10	0 - 67	0	0	NA	NA	NA	NA
Needlestick Injuries <sup>8</sup>	15	0 – 17.43	.104	.32627	NA	NA	NA	NA
<b>Operating Margin (%)</b>	20	-20.36 – 43	9.09	9.62	3.62	3.28	5.45	NA
<b>Patient Outcomes*</b>								
Medication Error <sup>9</sup>	15	0 – 37.44	1.91	5.2	20	5	600	NA
ICU Infection <sup>10</sup>	16	0 – 50.4	13.96	97	64	6,000	12,800	NA
Ventilator Pneumonia <sup>11</sup>	17	0 – 13,000	5.42	20	107	390	NA	NA
Wound Infection <sup>12</sup>	15	0 – 4,700	54.78	2,350	2,700	5,000	NA	NA
Falls <sup>13</sup>	18	1 – 12,000	23.19	100	NA	NA	NA	NA
Falls w/Injuries <sup>14</sup>	15	0 – 26.6	3.8	9.5	NA	NA	NA	NA
<b>Patient Satisfaction</b>								
% Highest Overall	28	28 – 98	69.15	71.55	62.00	62.50	56.85	NA
% Highest w/Nursing	28	30 – 100	63.45	63.60	60.29	62.65	NA	NA
Average Sat. Rating	28	4.2 – 5	4.39	4.44	4.36	4.41	4.30	NA
<b>Nurse Staff Satisfaction</b>								
% Highest Overall	22	20 – 98	49.46	42.00	38.80	37.00	39.80	NA
% Intent to Leave	17	0 – 23	12	15.50	NA	NA	NA	NA
Average Job Sat. Rtg	25	3.45 – 4.8	3.93	3.92	3.82	3.93	3.96	NA
Average Sat w/Supv	21	3.23 – 5	3.96	3.88	NA	NA	NA	NA
Average Sat w/Phys	20	2.5 – 4.2	3.76	3.68	NA	NA	NA	NA

<sup>5</sup> Workers' Compensation Claims per Hours Worked

<sup>6</sup> Workers' Compensation Claims with Paid Days Off per Payroll Days

<sup>7</sup> Unpaid Days off Due to Injury per Payroll Days

<sup>8</sup> Nurses' Needlestick Injuries per Hours Worked

<sup>9</sup> Medication Errors per Medication Doses

<sup>10</sup> ICU Central Line Infections per ICU Central Line Days

<sup>11</sup> Hospital Acquired Ventilator Pneumonias per Ventilator Days

<sup>12</sup> Post-Op Wound Infections per Surgical Cases

<sup>13</sup> Inpatient Falls per Inpatient Days

<sup>14</sup> Inpatient Falls with Injuries per Inpatient Days

Measure	Number Reporting 2007	Range 2007	Median 2007	Median 2006	Median 2005	Median 2004	Median 2003	Median 2002
<b>Performance Appraisal</b>								
% Highest Overall								
RN	39	0 – 95	5.56	3.91	3.64	4.49	19.50	NA
All Employee	39	0 – 88	6.42	4.50	4.14	9.38	8.00	NA
Average Rating								
RN	38	2.5 – 4.82	3.29	3.45	3.37	3.83	3.60	NA
All Employee	38	2.08 – 4.85	3.37	3.88	3.37	3.75	3.68	NA

NA = Data not available for those years.

\* Data reported as rate per 10,000 units.

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This project is supported by funds from the Division of Nursing (DN), Bureau of Health Professions (BHPr), Health Resources Services Administration (HRSA), Department of Health and Human Services (DHHS) under Grant #D66HP01391 – Nurse Education, Practice and Retention: Enhancing Patient Care Delivery Systems. The information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by the DN, BHPr, DHHS or the U.S. Government.

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