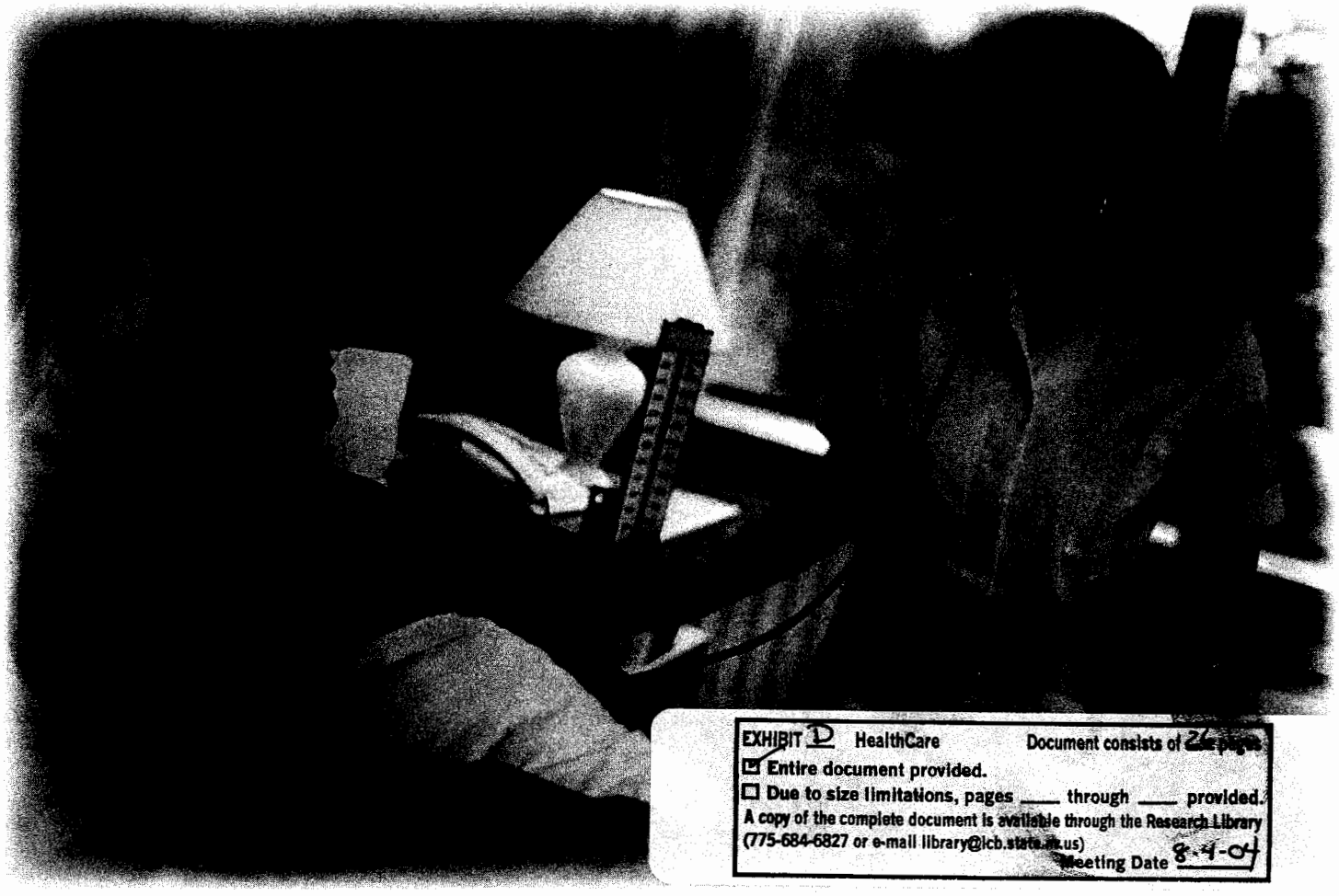
Exhibit D

A WIN-WIN SOLUTION

Focusing on Nurse Retention to Improve Hospital Profits and Quality Patient Care in Nevada

June, 2004



Prepared by Regulatory Economics, Inc.

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Disclaimer: This report is designed solely to facilitate public discussion of the issue. The report is not intended to serve as a narrative on any specific facility or system either currently in operation or planned. The forecasted figures serve only as general forecasts of possible results that are based upon limited and incomplete data. Thus, these forecasted figures are likely to significantly diverge from actual experience. Any change in assumptions will yield alternative results. The validity of assumptions is subject to the reliability of sources. Thus, we highly encourage other analyses which include additional data refinements to more completely develop this topic for public discussion and to both replicate and compare these general forecasts.

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Executive Summary

Las Vegas's health care market is unlike that of any other market in the United States. Nearly three out of four hospital beds is owned by publicly-traded, *for-profit* corporations.

In recent years, it has become increasingly difficult for Nevada's hospitals to increase their profits and, in some cases, even to remain solvent. As a result, hospitals have focused on limiting the cost of one of their largest expenses: their nursing workforce.

Unfortunately, this approach has failed to focus on nurse retention and led to high nurse turnover rates at many Las Vegas facilities. High nurse turnover rates have led to higher expenses for hospitals as well as greater patient workloads for remaining nurses.

Replacing nurses is an expensive proposition. If one takes into consideration the direct cost of recruitment, training, loss of productivity and increased use of overtime and agency nurses to fill in for lost employees, it can cost from 1.0 to 2.0 times a nurse's annual salary to replace a nurse.

Additionally, there are indirect costs associated with high nurse turnover. Because high nurse turnover often leads to greater patient workloads for remaining nurses, patient care can be adversely affected. This too can impact a hospital's profits by increasing liability insurance premiums or damaging a hospital's reputation.

This report, "A Win-Win Solution," examines the potential that focusing on nurse retention could have on hospital profit margins and patient care. It also offers a template for hospital managers to use to analyze the cost of nurse turnover at their facility.

Using three Las Vegas for-profit hospitals as an illustrative example, Regulatory Economics, a local business research group, explored this issue. We found:

- Due the high cost of replacing nurses, nurse turnover rates are a direct factor in hospital profitability;
- Increasing nurse retention has the potential to significantly and positively impact shareholder value;
- Our community's hospitals' current reliance on nurse overtime and high cost agency nurses to fill vacant nurse positions actually costs more than hiring additional staff - and more importantly, results in fewer available patient care hours.

A Win-Win Solution

- Nurse retention impacts patient outcomes and hence attorney's fees, liability insurance and litigation damage awards.

- The cost savings from reducing turnover rates will allow hospitals to hire additional nursing staff with no additional expenditure of funds.

Based on our findings we recommend that hospital management focus on nurses, not as a cost driver, but as an innovative "win-win" solution to improving profitability and the quality of patient care.

I. Introduction

The health care market in Clark County is unique - eight of our community's 12 hospitals, and 72% of all of our hospital beds, are owned by for-profit companies.[1] By comparison, fewer than one in seven hospitals nationwide is owned by a for-profit corporation.[2] While the majority of Clark County's for-profit hospitals have earned profits in recent years, it is becoming increasingly difficult to do so.[3] To reverse this trend hospital management needs to explore some innovative solutions.

Table 1:
Clark County Hospital Beds By Ownership Type

For-Profit	**72%**
Non-Profit	**12%**
Government	**17%**

Source: "Nevada Hospital Quarterly Report," Department of Human Resources, Health Care Financial Unit, 4th Quarter 2003

It is obvious that maximizing long run shareholder value is not possible without managerial policies that recognize operational characteristics which positively impact earnings. In practice, the myriad of issues facing management sometimes make it difficult to discern and implement appropriate policies.[4] This report investigates nurse retention not simply as a standard human resource issue, but rather as a neglected profit driver that has not been either fully recognized or addressed.[5] As suggested by our illustrative analysis, increasing nurse retention has the potential to significantly impact shareholder value (in terms of increasing price per share).

This report consists of six sections. A basic overview of the relevant issues is presented in the next section. These issues suggest that nurse retention is much more than an issue of direct labor costs. The third section of this report attempts to explain why this oversight has occurred. Specifically, we suggest institutional reasons that have led much of the industry to neglect the profit driver of nurse retention. A discussion and presentation of a stylized total cost template for nurse turnover is presented in the fourth section of this report. An illustrative analysis is presented in the fifth section for a major hospital company operating in Nevada. Finally, conclusions are presented in the last section.

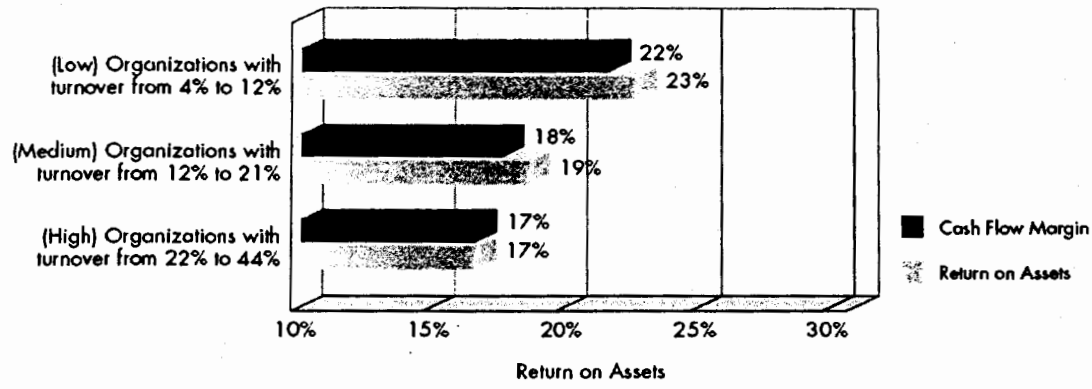
II. An Overview: The Interrelationships between Nurse Retention and Hospital Margins, Overtime Costs, Liability Insurance and Litigation, and Nevada Public Policy.

This section of the report is designed to provide a brief overview of those factors directly relevant to and indirectly impacted by nurse retention.

Hospital Margins and Nurse Retention

Nurse retention impacts hospital margins in several ways. The first is the simple observation that there exists a negative correlation between total employee turnover and hospital profitability as measured by cash flow margin and return on assets. Based upon a recent study utilizing a national sample of 235 hospitals, the average return on assets fell from 23% to 17% as hospitals ranged from low total employee turnover to high total employee turnover.[6] This is shown in Figure 1 below.[7]

Figure 1:
Relationship Between Employee Turnover and Profitability



Source: Figure provided by Tom Olivo, Success Profiles Inc., "The Business Case for Work Force Stability," VHA Research Series. Copyright VHA Inc., 2001.

In this regard, it is important to note that registered nurses (R.N.) represent the dominant category of hospital employment. This is particularly true in recent

years as hospitals have increased the number of R.N. positions relative to L.P.N. (licensed practical nurse) positions.[8] As an example, Table 2 below presents for three representative UHS hospitals in Nevada FTE employment by category.[9] The dominance of R.N. nursing positions is clearly shown in Table 2.

Table 2:
Full Time Equivalent Employees,
Selected Hospitals

	Desert Springs Hospital	Summerlin Hospital	Valley Hospital	Total
Registered Nurses	372	287	619	1,278
LVNs and LPNs	19	8	0	27
Aides and Orderlies	127	64	129	320
Sub-Total	**518**	**359**	**748**	**1,625**
Other Hosp. Personnel	487	320	795	1,602
Total	**1,005**	**679**	**1,543**	**3,227**
Registered Nurses as % of FTE Employees	37.0%	42.3%	40.1%	39.6%

Source: Individual hospitals, "Nevada Hospital Quarterly Report," Department of Human Resources, Health Care Financial Analysis Unit, 4th Quarter 2003

Nurses represent, on average, slightly more than 40% of hospital FTE employees. Thus, any discussion of employee turnover in Figure 1 above is actually a proxy for the underlying true issue, namely, nurse retention.

In terms of costs, labor costs (salaries plus benefits) represent approximately 57% of hospital costs as shown below in Table 3.[10] Thus, nurse turnover and associated vacancies are a direct factor in hospital profitability.

Using average salary data and average benefit data, one might expect nursing staff to represent approximately 50% of the above labor costs. However, there are several additional factors that are needed to fully appreciate the true percentage of these costs applicable to nursing staff. First, what is a specific hospital's policy towards overtime, and intensity of use of overtime, to compensate for vacant positions? As is well recognized, the use of overtime is particularly associated

with nursing vacancies. In general, the average overtime rate is 1.5 times the standard nurse hourly rate. Second, what is the specific hospital's use of agency nurses? In theory, these nursing personnel are temporary costs to the hospital. In practice, many hospitals rely on agency nurses as a type of quasi-permanent workforce. Although publicly available data is sketchy, these labor costs can range up to 2.0 times the standard nurse hourly rates.[11] Third, as explained in Section IV below, there are significant indirect costs associated with nurse turnover that are often conveniently ignored in traditional direct cost calculations.

Table 3:
Percent of Hospital Costs by Type of Expense

Expense Type	Percent of Costs
Wages and Benefits	56.7%
Capital	8.0%
Prescription Drugs	5.0%
Other Services	17.4%
Other Products (excluding Rx drugs)	13.0%

Source: Percents shown are from data presented in "Cost of Caring: Key Drivers of Growth in Spending on Hospital Care," American Hospital Association and Federation of American Hospitals, PriceWaterhouseCoopers, 2003

Overtime and Nurse Retention: Expensive Hours

To illustrate the fundamental problems noted above, consider the issue of overtime hours within the operational environment of hospital workflow. The issues of utilizing overtime for temporary needs, emergencies, smoothing work schedules, etc, is well known. However, current overtime requirements in most hospitals are related to the number of vacant positions stemming from turnover. If we accept the 1.5 hourly rate factor for an overtime hour compared to the standard hourly nurse rate, this implies a 50% increase in labor costs compared to a permanent nursing position. For example, in general terms the labor costs of 27 hours of overtime are equivalent to the labor costs of 40 hours of an additional nursing staff position. The point to note is, of course, the difference of 13 hours not available for patient care.

Table 4 shows for a recent quarter the use of overtime hours for the three Nevada hospitals used as an illustration in Table 2 above.[12] Clearly, overtime hours are disproportionately associated with nursing staff.[13]

Table 4:
Overtime Hours, Selected Hospitals
4th Quarter 2003

	Desert Springs Hospital	Summerlin Hospital	Valley Hospital	Total
Registered Nurses	11,969	12,731	18,184	42,884
LVNs and LPNs	730	431	0	1,161
Aides and Orderlies	4,627	3,941	3,385	11,953
Sub-Total	**17,326**	**17,103**	**21,569**	**55,998**
Other Hosp. Personnel	5,099	5,931	6,656	17,686
Total	**22,425**	**23,034**	**28,225**	**73,684**
% of Total Overtime Hours Worked by Registered Nurses	53.4%	55.3%	64.4%	58.2%

Source: Individual hospitals, "Nevada Hospital Quarterly Report," Department of Human Resources, Health Care Financial Analysis Unit, 4th Quarter 2003

Liability Insurance, Litigation, and Nurse Retention

One of the indirect costs of nurse turnover is the link between patient outcomes and nurse staffing ratios. High turnover leads to increased vacancies which are difficult to fill with qualified new nurses, leading to inevitable higher patient workloads (and lower nurse staffing ratios).

Unfortunately, these high patient workloads have direct financial implications for hospitals. An increasing body of literature suggests that a direct consequence of high patient workloads associated with high nurse turnover (or, alternatively, low nurse retention) is a negative impact on patient outcomes.[14] For example, after adjusting for patient and hospital characteristics, Aiken et. al. (2002) suggest that each additional patient per nurse increases the likelihood of patient death within 30 days of admission by 7% and an increase in the odds of failure-to-rescue by 7% as well.[15] Similarly, Needleman et. al. (2002) provide strong

evidence that increasing the number of hours of care per day provided by registered nurses reduces the rate of various infections, pneumonia, shock or cardiac arrest, and failure-to-rescue.[16] These negative patient outcomes, and thus nurse retention, are directly related to non-labor costs of hospital operations in three primary ways. These costs include hospital attorney fees, liability insurance, and litigation damage awards.

As is well known, there has been a recent literal explosion in hospital liability insurance costs. In many locations, hospitals have reported 200% to 300% increases in liability premiums between the years 2000 and 2002.[17] In Nevada, classified as a "crisis state" by the American Medical Association, professional liability insurance has followed these trends as shown below in Table 5.[18]

Table 5:
Growth in Professional Liability Expense for Hospitals in Crisis States,* 2001-2003

Increase of 100% or more	48.7%
Increase of 50% to 99.9%	21.4%
Increase of 0% to 50%	21.0%
Decrease	8.8%

* Eighteen states, including Nevada, have been identified as crisis states by the American Medical Association (as of March 2003).

Source: Figures shown based on data presented in "Professional Liability Insurance: A Growing Crisis," American Hospital Association, 2003

These costs not only impact hospital profitability, but, in addition, raise recruiting costs, community access to care, etc. as shown in Table 6.[19]

Table 6:
Effects of Increased Professional Liability Expenses for Hospitals in Crisis States*

Effect	Percent of Hospitals Reporting
More difficult to recruit physicians	53.1%
Significant impact on hospital finances and operations	48.3%
Loss of MDs and/or reduced coverage in Emergency Department	45.0%
Negative impact on hospital's ability to provide services	34.7%
Significant impact on access to care in community	18.6%

* Eighteen states, including Nevada, have been identified as crisis states by the American Medical Association (as of March 2003).

Source: Figures shown based on data presented in "Professional Liability Insurance: A Growing Crisis," American Hospital Association, 2003

These issues have also directly impacted hospital operations in Nevada. For example, in 2003, Desert Springs Hospital faced major departmental closure issues.[20]

Similarly, damage awards are also increasing in medical liability cases.[21] Even if hospitals are able to avoid increased in-court litigation and damage awards, they often face increased legal fees. The associated attorney fees are generally classified as business services and administrative costs. However, these legal costs are not simply "other costs" but are indirectly related to nurse retention. Thus, the issue of nurse retention has become a critical strategic issue for hospitals that is much more than a simple calculation of direct labor costs.

Nevada Public Policy and Nurse Retention

Often when an industry faces a shortage, it becomes an issue of public policy concern. Not surprisingly, for a critical service like health care, there is increasing concern in Nevada over the nursing shortage. This concern in Nevada has followed national trends where a number of states have established task forces and commissions to study the nursing crisis.[22]

Although there may be nuances in the definition of a shortage, two empirical indicators appear to suggest a problem, namely increases in both vacancy rates of available positions and the average time to recruit a new nurse. The relevant public policy issue is: To what extent does state government need to step in to "solve" the crisis?

Although an answer to the above question is outside the scope of this report, there is a relevant observation that needs to be made for state policymakers to consider. Nurse retention directly impacts the definition of a shortage and yet reflects, at least in part, private sector management policies. When inappropriate hospital policies toward nurse retention are partially responsible for the shortage, then the public sector should be wary of being used to solve a private sector problem.

Unfortunately, our interpretation of the available data and literature suggests that nurses are leaving hospitals with little intention to return to the hospital environment. Consider the implications in the context of Table 7.

Table 7:
Nursing Workforce Supply and Demand in Nevada

Average annual job openings for Registered Nurses:	
Due to growth:	470
Due to replacement:	246
Total	**716**
Annual nursing graduates (3 year average):	**281**
Calculated shortfall:	**435**
Offset:	
Inactive licenced nurses in Nevada (as of 2000):	2,000

Source: From data presented in "Nursing Workforce Supply and Demand in Nevada, 2000-2020," by John Packham, High Sierra Area Health Education Center, 2003; and the Nevada State Board of Nursing (see note 23)

Table 7 presents the projections of average annual job growth of registered nurses in Nevada from 2000 to 2010 from a recent study by John Packham (2003).[23] Also shown is the three year annual average of new nurse graduates from UCCSN programs as reported in Packham (2003). In addition, we have added estimates from licensing data of the State of Nevada's Board of Nursing indicating the number of nurses who maintain licenses but are inactive.[24] As shown, there are 2,000 inactive nurses in Nevada, which represents a five-year "stock" (solution to the shortage). This number only reflects nurses that can be tracked within the system. What is going on here? Is there a shortage of nurses within Nevada, or is there rather a hospital nurse retention problem that the hospitals themselves need to address?

III. Why Nurse Retention Is Not a Top Management Priority: Institutional Structure and Myopic Outcomes

The material presented above would suggest that increasing nurse retention is a critical and overlooked means of improving hospital profitability. If so, nurse retention might be expected to be a top management priority within the industry.

Surprisingly, this does not appear to be the case. Certainly nurse retention is a recognized issue, but the sense of urgency that we might expect does not appear to be commensurate with its coverage in hospital executive publications.

The natural question is: why not? If nurse retention is critical to profitability (margins), and is key to reducing litigation, overtime costs and the use of agency nurses, why would it not be viewed as "job one"? The purpose of this section of the report is to suggest a possible explanation of this puzzle.

The first factor involves an issue common to most major corporations, the separation of ownership and managerial control.[25] Owners (equity holders) do not run the corporation per se. Rather, management control is granted to a set of managers who are assumed to represent owners' interests. These interests are usually seen as those consistent with profit maximization or the attainment of maximum shareholder value. As discussed in the academic literature, and often referred to as "agency theory," it is quite possible for managers' interests to diverge from those of owners.[26] In simple theoretical models exploring managerial control of the firm, capital markets act as the threat or enforcing mechanism which forces managers' interests to coincide with owners' interests. However, as recent negative experiences in corporations have demonstrated, short run behavior that maximizes managers' gains can be inconsistent with the long run health of corporations and owners' interests. Particularly for publicly traded companies, the managerial pressure to show consistent quarterly improvements on a short-run basis can mitigate against policies that take a long-run perspective.

Given the above discussion, how can a hospital management team display success to equity analysts? This question plays directly into a second factor, the structure of the industry and its influence on hospital conduct and performance. Any manager has three basic methods to positively influence corporate profits. These three methods are to increase price (reduce discounts), increase sales (output, market share, or through a new product line), and reduce costs of operations

(decrease materials costs and labor costs, increase utilization of fixed assets). In the hospital industry, management flexibility in implementing major changes is often limited to reducing costs of operations. This is due to several factors.

Table 8:
Average Inpatient Revenue Discounts for Clark County Hospitals, FY 2003

Payer	Discount
Medicaid	71.8%
Medicare	77.3%
Other Government	66.7%
HMO and PPO	76.9%
Insurance	30.9%

Source: Fiscal year end June 30, 2003, Summary Financial Report-1, Statement of Revenues and Expenses, State of Nevada Division of Health Care Financing and Policy, Department of Human Resources

Due to changes that occurred in pricing structure in the late 1990's, price flexibility is fairly limited. As shown in Table 8, the "price" is a relatively rigid concept pegged directly to discounts by type of payer. A hospital manager, for example, is in no position to arbitrarily renegotiate with the State's health plan.[27]

A similar situation exists with respect to management control over basic product. There have been attempts to redefine services and to focus product lines (as with specialized hospitals), but once the capital stock is in place, management flexibility is limited. This is particularly true for general acute care hospitals. Thus, a management focus on cost containment becomes the natural objective. However, such a focus is difficult to apply to physicians, since their referrals for surgery and care are viewed as a profit center for the hospital. This leads to a managerial focus on the nursing staff.

As hospital chains have merged and acquired hospitals, they have also acquired additional market power in local markets.[28] During the 1990's, acquisition and merger activity was particularly strong, involving 45% of U.S. hospitals.[29] With the resultant increase in hospital market power in the local labor market for nurses, one hypothesis of a possible outcome would be a managerial policy to increase nurse workload (patients per nurse).[30] This hypothesis has been supported in a recent empirical study.[31] Combining this with the need to avoid direct labor costs (permanent staff), it is at least plausible to suggest that managers may not have short run incentives to engage in optimal nurse retention policies. Put another way, since many costs associated with nurse retention involve risk factors and costs that are not easily definable, managers may not have incentives to approach risk management in a fully integrated manner.

IV. The Total Costs of Nurse Turnover: A Suggested Template

The purpose of this section is to suggest an overview, or template, of the total costs associated with nurse turnover. This template is based upon the discussion above and is not limited to direct labor costs.

There has been a range of nurse turnover costs suggested in the literature, generally as a multiple of average salaries (such as 1.5 times or 2.0 times "normal" salary).[32] These figures are suggestive of general trends. Hospital administration needs to be able to respond to the items listed below. In specific cases, the following is not necessarily exhaustive or universally applicable, but simply indicative of an integrated approach to costs of nurse turnover. The general template is presented below.[33]

HOSPITAL COSTS OF NURSE TURNOVER: A SUGGESTED TEMPLATE

PART ONE: INDIVIDUAL NURSE

A. COSTS DURING VACANCY PERIOD

Direct:
Overtime Costs (Existing Permanent Nurse Staff)
Agency Nurse Costs
Overtime Costs (Agency Nurse)
Emergency Fill-In Costs (Premium Pay, Agency Nurse)

Indirect:
Cost of Increased Mistakes
Increase in Negative Patient Outcomes
Lost Productivity to Affected Department:
a. Supervisor
b. Other Personnel
Cost of Supervisor's Time (Rearranging Schedules, Explaining Work, etc.)

B. COSTS ASSOCIATED WITH DEPARTING NURSE

Direct:
Cost of Company Training and Education Benefits
Cost of Relevant Licenses and Certifications
Cost of Severance or Benefits Termination
Cost of Exit Interview

Indirect:
Cost of Lost Knowledge
Lost Productivity Prior to Exit After Termination Intent

C. RECRUITING COSTS

Advertisements and Related Items
All Internal Recruiting Costs by Human Resource Personnel
Drug Screens and Other Pre-Employment Tests
Agency Costs (Domestic or International)
New Hire Bonus and Incentive Programs

D. TRAINING COSTS

Direct:
Orientation and New Employee Set-Up Costs
Departmental Training

Costs of Training Materials

Indirect:
Cost of New Nurse Supervision

E. LOWER PRODUCTIVITY OF NEW NURSE: LEARNING CURVE

Cost of Initial Lower Productivity (Percent, Number of Weeks, Adjusted By Salary)
Cost of Increased Mistakes
Impact on Patients

PART TWO: SYSTEM IMPACTS OF NURSE TURNOVER

A. LOST REVENUES

Impact of Nurse Turnover on Hospital Reputation
Impact of Hospital Reputation on Market Share
Impact of Hospital Reputation on Future Growth

B. HOSPITAL ERRORS

Impact of Nurse Turnover (Vacancies) on Patient Outcomes by Department

C. LEGAL EXPENSES AND LIABILITY FEES

Impact on Legal Fees
Impact on Hospital Professional Liability Premiums
Impact on Court Judgments

V. Financial Implications: Overtime and Turnover

This section analyzes the financial implications that hospital nurse staffing policy has for shareholders. Simply to serve as an illustrative analysis, it is based on the data on staffing levels, overtime hours and retention rates previously presented and on United Hospital Service's (UHS) published financial reports for 1996 through 2002.[34] The analysis suggests that reduced reliance on the use of overtime, and especially improved retention of RNs, may have substantial benefits to shareholders.

Overtime

Based on the data presented in Table 4, the three hospitals in the Las Vegas area (Desert Springs, Summerlin and Valley) used 171,536 hours of RN overtime (at an annualized rate). This represents 85.77 FTE nurses, and, given the current staffing level of 1,278 FTE RNs, represents 6.71 percent of RN hours. Since overtime is compensated at 1-1/2 times the normal wage, the use of overtime to increase the number of RN hours available increased the cost of staffing the hospitals by 10.07 percent. To put this differently, the three hospitals, in effect, hired the equivalent of 86 additional RNs but paid for the equivalent of 129 additional nurses.

It is unrealistic to expect that overtime can, or should, be completely eliminated. However, it seems reasonable to suppose that the amount of overtime used could be reduced. To illustrate the implications of reduced reliance on overtime, suppose that the number of overtime hours used is reduced by fifty percent. To keep the number of RN hours available constant, suppose that these overtime hours are replaced by "straight time" hours. Hiring 100 nurses and having them work overtime at current rates yields the equivalent number of hours to a staff of 106.7 nurses at a cost equivalent to a staff of 110 nurses. Replacing half of the overtime with regular hours implies hiring 103.4 nurses to achieve the hours equivalent of 106.7 nurses, but at a cost equivalent to a staff of 108.5 nurses. The reduction in the use of overtime results in a direct wage and salary cost saving of 1.34 percent. Using a conservative estimate that nursing wages and salaries represent approximately 20 percent of costs, then this would result in a reduction of total operating costs of about 27 basis points or just over one-fourth of one percent.

Upon first consideration, the above figure seems like a small amount. However, an analysis of UHS financial statements suggests that, based on historical

averages, this would increase earnings per share by 9 cents per share or approximately 4 percent.

Retention

A far more important issue is retention of nursing staff. Our analysis suggests that substantial reductions in costs could be achieved by improving retention of RNs. Based upon retention data made available to us, recent turnover rates at Desert Springs and Valley hospital may be as high as a range of 25 to 33 percent.[35] To be conservative, we assume an initial benchmark figure of 20 percent. In any event, these turnover rates are high relative to the midpoint figure of medium turnover organizations of (rounded) 17 percent, or roughly one out of six.[36] The high turnover rates are especially problematic since even a conservative estimate of the (total) cost of replacing a nurse is a figure approximately equal to a nurse's annual salary.[37]

The cost implications of high turnover rates are illustrated in Table 9. The table assumes a nursing staff of 100 RNs, each of whom receives annual compensation of $50,000 (including benefits). This is shown in the first column of Table 9. The second column shows turnover rates, which range from 17 percent to 33 percent and the third column shows the corresponding number of quits. The fourth column shows the total annual cost of maintaining a staff of 100 RNs, including compensation and the costs of replacing those nurses who leave. The fifth column shows the percentage reduction in total cost from reducing turnover to a 17 percent figure.

Table 9:
Cost Implications of RN Turnover Rates

Number of RNs	Turnover Rate	Number of Quits	Total Cost	Percentage Saving
100	17%	17	$5,850,000	-
100	20%	20	$6,000,000	2.5%
100	25%	25	$6,250,000	6.4%
100	33%	33	$6,650,000	12.0%

Table 9 shows that the potential cost savings available from improved retention of RNs are large. Even reducing a very low turnover rate of 20 percent to the level of 17 percent will result in a 2.5 percent reduction in total costs. Reducing turnover from 33 percent to the lower figure reduces the total cost of maintaining staff by 12 percent. This is a significant cost saving.

Alternatively, Table 9 shows the percentage by which the nursing staff could be increased for the same total expenditure. That is, reducing turnover from 33 percent to 17 percent would allow the *nursing staff to be increased by 12 percent, with no additional expenditure of funds.* The increase in nursing staff should lead to improved patient outcomes, with all of the benefits which that implies.

Table 10 shows the potential financial implications of improved retention for shareholders. The analysis assumes that the Nevada hospitals are representative the UHS system, and that the reductions in turnover rates occur system-wide. Pro forma earnings per share (EPS) are based on an analysis of UHS's income statements for 1996 through 2002. Each income statement item was converted to a percentage of revenue and then averaged over the 1996-2002 to create a standardized income statement. Over 1996-2002, wages and salaries expense averaged 37.33 percent of revenue, and net income averaged 4.14 percent of revenue. The analysis is based on the assumption that RNs comprise twenty percent of total costs, as a percentage of revenue. UHS's 2002 revenue of $3,258.9 million was then applied to the standardized income statement to calculate pro forma net income and earnings per share. This yields pro forma EPS (undiluted) of $2.26. UHS's share price at the close on May 14, 2004 was $43.87. This implies a price to pro forma earnings ratio of 19.4, which is comparable to the average price-earnings (P/E) ratio for the health care industry of approximately 18.7. The analysis in Table 10 assumes that the P/E ratio for UHS remains constant.

Table 10:
Share Price Implications of Reducing RN Turnover Rates to 17 Percent

Turnover Rate	Percentage Saving	Change in Pro Forma EPS	Percentage Increase	Share Price
20%	2.5%	$0.17	7.52%	$47.17
25%	6.4%	$0.44	19.47%	$52.41
33%	12.0%	$0.83	36.73%	$59.98

Column 1 shows the turnover rate and column 2 shows the percentage cost saving from reducing turnover from the rate shown to a figure of 17 percent. Columns 1 and 2 of Table 10 are copied from Table 9. Columns 3 and 4 of the table show in increase in pro forma EPS in dollar and percentage terms. Reducing turnover from 20 percent to 17 percent results in a 2.5 percent reduction in the staffing cost. This leads to an increase of 17 cents in earnings per share, or a 7.5 percent increase. This implies an increase in the share prices of $3.30 per share or an increase in shareholder wealth of just under $200 million. If turnover is reduced from 33 percent to 17 percent, then earnings per share increase by 83 cents per share, or 36.73 percent. This implies an increase in the price of the stock of $16.10 per share, or a $962 million increase in shareholder wealth.

The percentage cost savings and the impacts in share price may seem large. The calculations are based on the assumption that the three Nevada hospitals studied are typical of the UHS hospitals.[38] For example, assuming for simplicity that the Nevada hospitals represent only 10 percent of UHS's total revenue, to the extent that only Nevada hospitals improve retention, the effect will be proportionately smaller.[39] That is, if only the Nevada hospitals reduce turnover from 33 percent to 17 percent, then staffing costs at Nevada hospitals will decrease by 12 percent. This implies that staffing costs for UHS overall will fall by 1.2 percent. This in turn implies an increase of about 8 cents, or 3.5 percent, in pro forma earnings per share, and a corresponding increase in the share price. The basic conclusion of our analysis, that improving retention of RNs will have substantial financial benefits for shareholders, remains valid.

VI. Conclusions

This report has investigated nurse retention not simply as a standard human resource issue, but rather as a relatively neglected profit driver that has not been either fully recognized or addressed. The material presented above would suggest that increasing nurse retention is a critical factor in improving hospital profitability. In addition, this research explored institutional reasons why nurse retention has not been emphasized. The basic conclusion of our analysis is that improving retention of RNs will have substantial financial benefits for shareholders.

As noted in a recent FORTUNE story, the hospital industry may need to search for "innovative solutions" to its current struggles.[40] Our basic management suggestion is for hospitals to rediscover their nursing workforce not as a cost driver but rather as an innovative solution to profitability concerns. As simple as this suggestion sounds, it will require a refocus from what we believe are current management priorities. For example, it is a distinct possibility that an investment in its nurses might represent a higher rate of return for management than a marginal facility acquisition.

In summary, our report suggests that nurse retention is a management objective that has the potential to directly improve hospital margins. With the total costs of nurse recruitment and turnover so high, effective policies to increases retention (lower turnover) may represent a first best solution. In many respects, we view this suggestion as a "win-win" strategy rather than a confrontational issue.

Notes

[1] "Nevada Hospital Quarterly Report," Nevada Department of Human Resources, Health Care Financial Unit, 4th Quarter 2003.

[2] "Fast Facts on U.S. Hospitals on *Hospital Statistics,*" American Hospital Association, http://www.hospitalconnect.com/aha/resource_center/fastfacts/fast_facts_US_hospitals.html

[3] According to Nevada Hospital Quarterly Reports for 2003, three Clark County for-profit hospitals posted operating losses for at least one quarter in 2003 (Lake Mead, Sunrise, and Desert Springs).

[4] For an overview of issues and management within corporate governance, *see Corporate Governance: Theoretical and Empirical Perspectives*, Xavier Vives (editor), Cambridge University Press, 2000 and *The Nature of Organizational Leadership: Understanding the Performance Imperatives Facing Today's Leaders*, Stephen J. Zaccaro and Richard J. Klimoski (editors), Jossey- Bass/Pfeiffer 2001.

[5] All nurses (and employees) are critical to success, but, unless noted, our use of the term nurses focuses on R.N. (registered nurse) nurses.

[6] See the excellent study "The Business Case for Workforce Stability", VHA Research Series 2002 (Volume 7). We appreciate and acknowledge our discussions of relevant issues with one of the major authors of this report, Tom Olivo of Success Profiles, Inc.

[7] This figure was produced by Tom Olivo (see note 6 above) who granted us permission to use it in this study.

[8] See, for example, "North Carolina Trends in Nursing 1982-2001: RN and LPN Supply Trends", The North Carolina Center for Nursing, March 2003 and the paper by Lynn Unruh, "The Effect of LPN Reductions on RN Patient Load in Florida Hospitals", 2003.

[9] FTE estimates as reported in the quarterly reports are based upon total hours from all activity by category divided by a figure of 2000 work hours. In Nevada, individual hospitals file a quarterly report (and annual report) of hospital operations (Nevada Hospital Quarterly Report) to the State of Nevada, Department of Human Resources, Health Care Financial Analysis Unit. In this report, we utilized data for three illustrative hospitals which are important providers of services in Nevada and for which the information appears accurate and complete. These three hospitals are part of the major company noted above, Universal Health Services. As previously noted, this report is not intended to serve as a narrative on any specific facility or system. UHS is a major company providing services in Nevada and the major firm of its type operating in Clark County. It also provides a wealth of publicly available data.

[10] The figures here are based upon the data analyzed and reported in the excellent report, "Cost of Caring: Key Drivers of Growth in Spending on Health Care", prepared for the American Hospital Association and the Federation of American Hospitals by Pricewaterhouse Coopers, 2003. This report provides an interesting overview of current and future cost issues facing hospitals.

[11] For example, see Healthcare Financial Management Association and Kronos Incorporated, "Time Is Money: Labor Analysis Toolkit" (2002).

[12] From the same Nevada Hospital Quarterly Reports discussed above in note 9.

[13] These figures tend to change by quarter as reflected in the quarterly reports. This table uses the latest data that we were able to obtain, that of the fourth quarter, 2003.

[14] For a major listing of reports and studies in this area, see Diane Heinz, "Hospital Nurse Staffing and Patient Outcomes", *Dimensions of Critical Care Nursing*, Volume 23, No. 1, 2004, pp.44-50

[15] See Linda H. Aiken, Sean P. Clarke, Douglas M. Sloane, Julie Sochalski, and Jeffrey H. Silber, "Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction", *Journal of the American Medical Association*, Vol. 288, No. 16, 1987-1993.

[16] See Jack Needleman, Peter Buerhaus, Soeren Mattke, Maureen Stewart, and Katya Zelevinsky, "Nurse-Staffing Levels and the Quality of Care in Hospitals", *New England Journal of Medicine*, Volume 356, No. 22 (2002), 1715-1722.

[17] See "Professional Liability Insurance: A Growing Crisis: Report of the AHA Survey of Hospitals on Professional Liability Experience", AHA, 2003. Individual reports publicly available for states such as Connecticut, Florida, Georgia, and Texas reflect similar experiences.

[18] The figures here are based upon the data analyzed and reported by the AHA in the report titled "Professional Liability Insurance: A Growing Crisis: Report of the AHA Survey of Hospitals on Professional Liability Experience", op. cit.

[19] The figures here are based upon the data analyzed and reported by the AHA in the report titled "Professional Liability Insurance: A Growing Crisis: Report of the AHA Survey of Hospitals on Professional Liability Experience", op. cit.

[20] Specifically, major issues of departmental closure, retrenchment and reopening were discussed in a series of articles in the *Las Vegas Review Journal* in early 2003. These included the maternity ward (May 24th), the orthopedic department (January 24th) and emergencies (March 26th, April 1st).

[21] As an example, see the figures reported for cases involving long term health care in "Long Term Care: General Liability and Professional Liability: Actuarial Analysis", Theresa Bourdon and Sharon Dubin, Aon Risk Consultants, Inc., March 2003.

[22] See "State Responses to Health Worker Shortages: Results of 2002 Survey of States", Bureau of Health Professions, Health Resources and Services Administration, US Department of Health and Human Services.

[23] Specifically, see John Packham, "Nursing Workforce Supply and Demand in Nevada, 2000 to 2020", High Sierra Area Health Education Center, 2003.

[24] The Nevada State Board of Nursing tracks data on nurses who maintain licenses whether are not they are currently working. Nurses who reside in Nevada but who leave the licensing system are not covered by the data. However, based upon the available licensing data, in the year 2000 there were approximately 16,000 registered nurses at a time when reported employment of registered nurses was 14,000. The difference is, of course, 2,000 registered nurses. These figures are from reported testimony of Debra Scott, Executive Director, Nevada State Board of Nursing as presented to Nevada Legislative Committee on Health Care (Subcommittee to Study the Development of a System for Reporting Medical Errors), February, 2002.

[25] As noted in note 4 above, the study of management response to performance issues is not straight forward as the direct links between ownership and operational control become separated.

[26] For a brief summary of these issues, see W. Kip Viscusi, John M. Vernon, and Joseph E. Harrington, "Economics of Regulation and Antitrust", The MIT Press, 2000, Chapter 14.

[27] The data for inpatient billed charge revenue by classifications and inpatient deductions by classification are shown in *Fiscal Year End June 30, 2003 Summary Financial Report-1*

Statement of Revenues and Expenses, State of Nevada. Department of Human Resources, Division of Health Care Financing and Policy.

[28] See, for example, Elliot Wicks, Jack Meyer, and Marcia Carlin, "Assessing the Early Impact of Hospital Mergers", Washington DC: Economic and Social Research Institute, 1998.

[29] UF News (University of Florida), "UF Study: Hospital Mergers Not Necessarily More Costly for Patients", October 9, 2003 [Discussing doctoral dissertation of Sourav Chaterjee] .

[30] Basically, the simple (monopsony) model of a firm with power in a specific labor market can be altered to suggest an increase in workload rather than a decrease in wages.

[31] The specific study of interest is Janet Currie, Mehdi Farsi, and W. Bentley MacLeod, "Cut to the Bone?: Hospital Takeovers and Nurse Employment Contracts", National Bureau of Economic Research, NBER Working Paper No. w9428, January 2003.

[32] See, for example, "The Business Case for Workforce Stability", VHA Research Series 2002 (Volume 7) and Bonnie L. Atencio, Jayne Cohen, and Bobbye Gorenberg, "Nurse Retention: Is It Worth it?", *Nursing Economics*, Vol. 21, No. 6, 2003.

[33] A prior general model of labor turnover costs was developed by William G. Bliss (Bliss and Associates, Inc.) and Robert F. Gately (Gately Consulting). Our approach here is a new occupation-specific analogue to their general approach. We appreciate and acknowledge our discussions of relevant issues with Robert Gately.

[34] As noted previously, UHS is to be commended for providing considerable publicly available data at its website.

[35] Data on workforce issues such as retention are not generally available for study. However, these two hospitals in Clark County, Nevada are covered by a collective bargaining agreement between UHS and SEIU Local 1107. Monthly reports on workforce quits, etc, are provided as part of the agreement to SEIU. We were allowed access to these reports and our numbers on turnover rates reported here are based upon these monthly reports for 2003 as compiled by SEIU.

[36] The figure of 17 percent reflects the midpoint (rounded) of the medium turnover organizations shown in Figure 1 (that is, 12 percent to 21 percent).

[37] See note 30 above. As discussed, reported figures in the literature suggest a range of 1.5 times to 2.0 times the annual salary.

[38] A listing of all units in the UHS family of facilities is available at their web site. See note 3 above.

[39] In actuality, it appears from financial data made available to us from SEIU Local 1107 that the Nevada revenue percentage is approximately 15 percent. Our calculations can be scaled by the appropriate ratio. However, for illustrative purposes, a 10 percent figure is the easiest to follow.

[40] See the recent FORTUNE article (May 31, 2004) by Maggie Maher titled "Hospitals' Terminal Disease: Health-care spending continues to rise-so why is this industry struggling to grow?"

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