

A Single-Hospital Study of Travel Nurses and Quality: *What Is Their Impact on the Patient Experience?*

Marcia Faller, PhD, RN, Bob Dent, DNP, MBA, RN, NEA-BC, CENP, FACHE, and Jim Gogek, MA



Health care providers that cannot recruit and hire the number and type of nurses they need regularly turn to travel nurses to fill clinical needs. Continued high demand for nurses, particularly experienced and specialty nurses, is expected to sustain or increase the uti-

lization of travel nurses in hospitals and other health care facilities for the foreseeable future. With patient care quality and experience among the top priorities in the health care industry, the quality of care delivered by travel nurses is critically important.

Temporary or supplemental nurses account for approximately 30% of the nursing workforce in the United States,¹ yet travel nurses only make up about 1.5% to 2.0% of nurses in acute care settings (M. Faller, personal communication, 2017). Travel nurses typically have a short-term contract period, usually 4, 13, or 26 weeks, and they often complete multiple assignments in different parts of the country. They may be integral in addressing immediate shortages of nurses, fluctuations in patient demand, and cost pressures.¹ Upon receiving their unit assignment and orientation, the role of the travel nurse is to immediately assume direct patient care duties. There is often a perception that patient care by travel nurses is not as high quality as care by core staff, but there is no research evidence to support this belief. Therefore, it is important to understand the impact of travel nurses on the quality of patient care and on the patient experience.

A few studies have examined the quality of supplemental nurses, of which travel nurses are a subset, including through long-range analysis of large datasets covering multiple states and foreign countries. In general, this research has concluded that the experience and education of supplemental nurses is equivalent to or even superior to that of core staff nurses.

A 2013 study examined a very large nurse dataset and compared the use of supplemental registered nurses with failure to rescue events.² It concluded that higher use of supplemental nurses does not affect patient mortality “and may alleviate nurse staffing problems that could produce higher mortality.” A 2011 study on cost and quality issues of supplemental nurse staffing in the United Kingdom,³ with data gathered from hospital units across the country, found that overall quality scores were no different between units that employed only permanent staff and units that employed both permanent and supplemental staff.

There is still much more to learn about the use of supplemental nurses—and particularly about the use of travel nurses. By examining a specific case, a hospital with a distinct annual period where patient demand increases, through a unique set of quality of care and patient experience measures, we aim to add to the existing body of research and inform decision making regarding the use of travel nurses.

This study examines the use of travel nurses at a community hospital in the southern United States. The hospital is representative of large regional providers at the urban–rural interface, and is in one of the fastest growing regions in the country, with an estimated population of just over 300,000.⁴ As such, it shares the characteristics of a health care provider with high urban demand and wide rural coverage.

METHODOLOGY

The study answers how utilization of travel nurses affects quality of care and patient experience in a specific hospital setting. Using Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores, comparisons were made among units with travel nurses to the same or similar units with few or no travel nurses. Changes in HCAHPS scores were measured as the number of travel nurses increased within and across the units, which were adult critical care,

medical, oncology, orthoneurology, and surgical. HCAHPS scores were used to measure the impact of travel nurses based on a series of questions related to patient perception of the nursing care they received.

Also utilized were National Database of Nursing Quality Indicators (NDNQI) for each unit; these nursing-sensitive indicators are calculated based on standardized reporting of data in the national dataset developed from member hospitals. NDNQI were used to measure units with travel nurses compared to the same or similar units with few or no travel nurses. In addition, changes in NDNQI were measured as the number of travel nurses increases within and across units.

Data were extracted from October 1, 2013, through September 30, 2015, from each unit in quarterly time periods. Travel nurses, all of whom were RNs, were supplied to the hospital from 64 agencies.

Analysis of variance and Tukey’s analyses were used to compare HCAHPS and NDNQI data across and within units, and to determine whether there were significant differences. Regression analyses were used to examine how HCAHPS and NDNQI results changed as the number of travel nurses changed.

This study looks at 1 hospital with distinct peak seasons. This is a relatively small sample, which may limit generalizability. Hospital settings are complex, and the metrics used to gauge quality of care by nurses are influenced by many other factors, such as the quality of the work environment. This study does not control for these other factors.

RESULTS

Overall, the analysis indicated that quality of care and patient satisfaction were not affected when use of travel nurses increased. Use of travel nurses (including international nurses on contract) ranged from 0% to 44% of total nursing hours per unit per quarter and averaged 9%. [Figure 1](#) shows the average percentage of RN time covered by travel nurses for each unit.

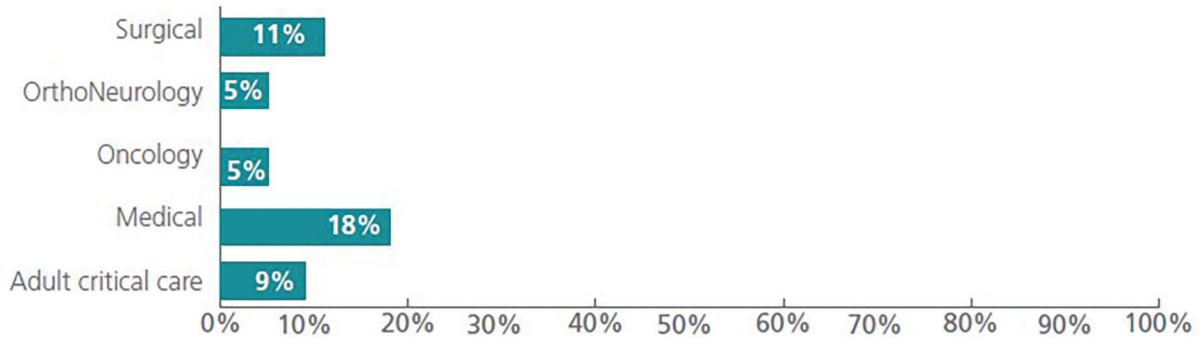
Statistical tests comparing HCAHPS and NDNQI data to travel nurse coverage within and across units showed very few statistically significant differences. Further, in the few tests where statistically significant differences did occur, there were no consistent trends.

For example, within each of the 5 nursing units, HCAHPS and NDNQI data for quarters that had higher travel nurse coverage were compared to quarters that had lower travel nurse coverage. A statistical test was conducted 12 times for each unit, 1 for each quality score, resulting in 60 distinct tests of significance. Of those 60 tests, only 5 showed statistically significant differences ([Figure 2](#)).

As travel nurse coverage changed within the 5 units, there were no differences when patients were asked whether nurses listen carefully, whether nurses explain things in a way the patient could understand, whether pain was well controlled, whether staff did everything they could to help with pain, and whether staff explained what medicine was for and described possible side effects. There also were no significant

Figure 1. Percent RN Time Covered by Travel or International Nurses

Fig. 1 Average percent of RN time covered by travel or international nurses by unit



differences in catheter-associated urinary tract infections or in nursing unit turnover rate (Figure 3).

There was a lack of consistent patterns among the tests that showed statistically significant differences in quality scores based on level of travel nurse coverage. This suggests that there is no identifiable relationship between travel nurse coverage and quality of care. For example, when looking at the average percent of patients with hospital acquired pressure ulcers (HAPU) across unit quarters, the proportion increased when travel nurse coverage increased from 0% to 1%, to 2% to 10%, but decreased at higher levels of coverage (Figure 4). The logical progression would hold that if travel nursing were linked to negative outcomes, an increase in travel nurses would in turn increase those negative outcomes. But that pattern was not observed.

Similarly, within the adult critical care unit, the average percentage of HAPU increased, decreased, and then increased again as travel nurse coverage increased (Figure 5). The same variability was seen in central line-associated blood stream infections within the oncology unit (Figure 6).

CONCLUSION

The value of this study is its specificity to travel nurses and its focus on real-world work environments in a prototypical facility in today's health care industry—a busy regional hospital in a fast-growing interface of urban and rural environments. The outcomes data reflect baseline standards for nursing quality. Patient experience and quality of care metrics in this research, HCAHPS and NDNQI, are 2 national data sources used throughout the health care industry to measure and compare consumer satisfaction and nursing care.

Results from the large majority of tests showed no significant differences in the patient experience or quality of care on 5 specific nursing units with varying percentages of travel nurse coverage.

Although there were a few significant findings for certain scores and certain units, there was not enough consistency across these findings to present a trend. The lack of consistency suggests that the significant findings were not related to the level of travel nurses, but rather by some other variable. The majority of tests showing no significant differences, and the absence of any meaningful trends in those few tests that did

Figure 2. Comparison of HCAHPS and NDNQI Data for Travel Nurse Coverage

Few tests showed a statistically significant difference



show significant differences, indicate no differences in care quality and patient experience when travel nurses are used.

Limitations of this study include that it is confined to the use of travel nurses at 1 hospital in a fast-growing, mid-sized metropolitan area in the southern United States. As such, however, it supplements a growing body of research on contingent nursing that is based on large and often generalized datasets. **NL**

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Figure 3. Differences in Mean Quality Scores

Fig. 3 Was there a statistically significant difference in mean quality scores when comparing quarters with travel nurses to quarters with few or no travel nurses?
 [N=no significant difference detected; Y=significant difference detected]

| | | ADULT CRITICAL CARE | MEDICAL | ONCOLOGY | ORTHONEUROLOGY | SURGICAL |
|--------|---|------------------------|---------|----------|----------------|----------|
| HCAHPS | Did nurses treat you with courtesy and respect? | N | N | Y | N | N |
| HCAHPS | Did nurses listen carefully to you? | N | N | N | N | N |
| HCAHPS | Did nurses explain things in a way you could understand? | N | N | N | N | N |
| HCAHPS | After you pressed the call button, how often did you get help as soon as you wanted it? | Y | N | N | N | N |
| HCAHPS | During this hospital stay, how often was your pain well controlled? | N | N | N | N | N |
| HCAHPS | Did the hospital staff do everything they could to help you with your pain? | N | N | N | N | N |
| HCAHPS | Did hospital staff tell you what the medicine was for? | N | N | N | N | N |
| HCAHPS | Did hospital staff describe possible side effects in a way you could understand? | N | N | N | N | N |
| NDNQI | Percent of patients with hospital acquired pressure ulcers stage II and above. | Y | N | N | N | N |
| NDNQI | Nursing unit turnover rate | N | N | N | N | N |
| NDNQI | Central line associated blood stream infections | Y | N | Y | N | N |
| NDNQI | Catheter associated urinary tract infections | N | N | N | N | N |

Note: Compares quarters with 0-1% travel nurse coverage, 2-10% coverage, 11-19% coverage, and 20%+ coverage
 Based on HCAHPS & NDNQI scores

Figure 4. Comparison of HAPU Percentages for All Units

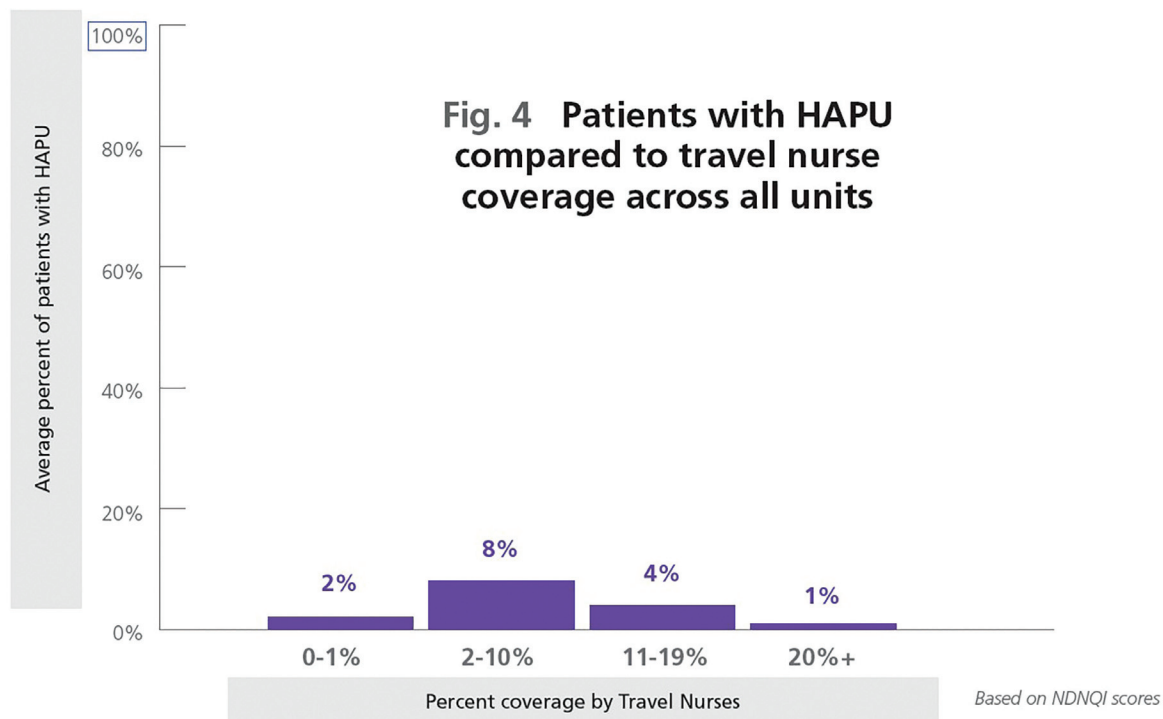


Figure 5. Comparison of HAPU Percentages in Adult Critical Care

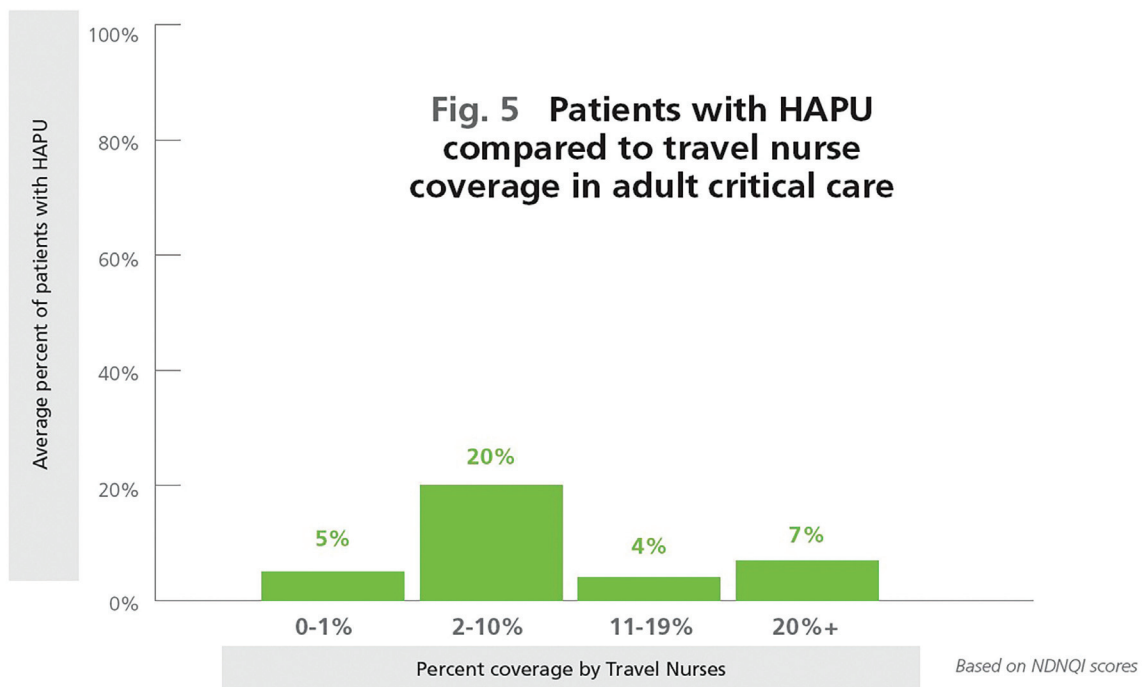
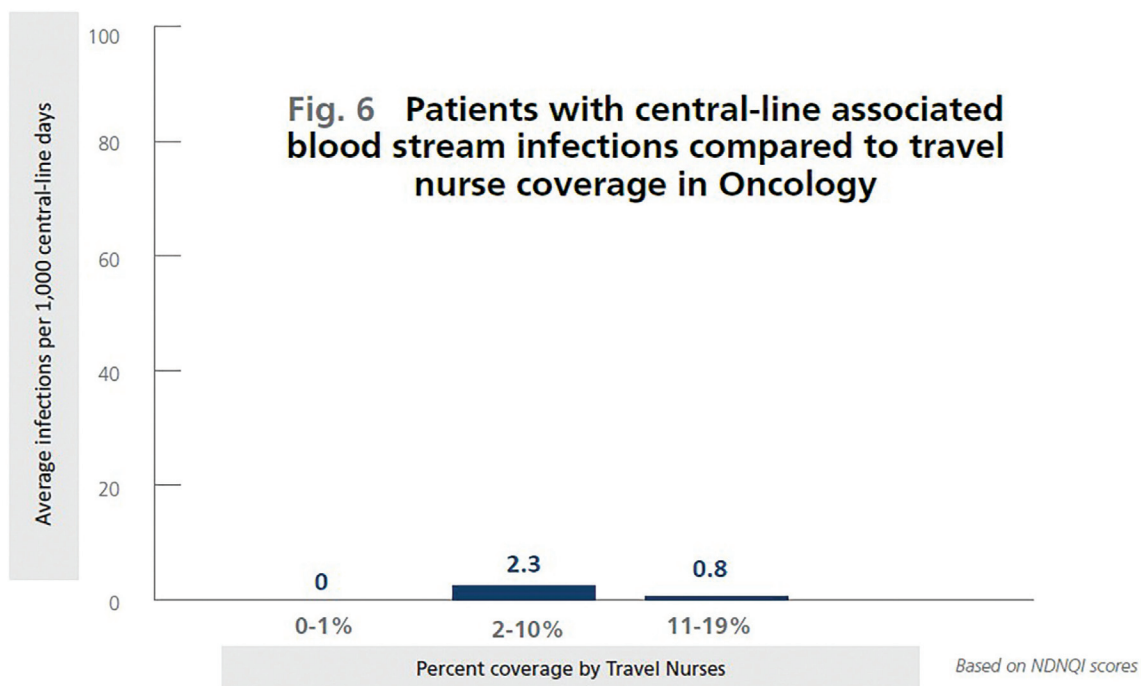


Figure 6. Comparison of CLABSI Rates in Oncology



CLABSI, central line-associated blood stream infections.

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Marcia Faller, PhD, RN, is Chief Clinical Officer at AMN Healthcare in San Diego, California. Bob Dent, DNP, MBA, RN, NEA-BC, CENP, FACHE, is Senior Vice President, Chief

Operating Officer and Chief Nursing Officer at Midland Memorial Hospital in Midland, Texas. Jim Gogek, MA, is Senior Writer at AMN Healthcare in San Diego, California. He can be reached at jim.gogek@amnhealthcare.com.

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