Chapter 27. Temporary, Agency, and Other Contingent Workers

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Background

The Institute of Medicine (IOM) report, *Keeping Patients Safe: Transforming the Work Environment of Nurses*,[1] determined that the use of temporary nursing staff or staff from agencies external to the health care organization to provide care threatens patient safety. Involving personnel with less knowledge of the nursing unit and larger organizational care policies—and interrupting the continuity of patient care—increases the risk to patients' safety. In its report, the IOM recommended that health care organizations avoid using nurses from external agencies.

In 2004, 2.3 percent of registered nurses (RNs) provided their services through a temporary agency, as opposed to being employed by the organization or organizations through which they delivered care.[2] This was an increase from the 1.8 percent of RNs working in their principal nursing position through a temporary employment service in 2000, which itself was a 36 percent increase over that reported in 1996, reversing a declining trend between 1988 and 1996.[3] Although this proportion continues to represent a minority of the nurse workforce, the increase mirrors workforce trends occurring globally across many industries.[4, 5] Temporary workers, contract employees from external agencies, intermittent workers, "casual" workers, and other types of workers without a standard employer-employee relationship with the organization in which they provide services are together referred to in the United States as "contingent workers."[6] In other counties, such arrangements are sometimes referred to as "precarious employment," the terminology used in the European Union, for example.

Although use of nurses from external agencies can increase the number of staff available for patient care, threats to patient safety are theorized to arise, in part, because temporary staff are less familiar with a nursing unit and a health care organization's overall structure, policies, practices, and personnel—including information systems, facility layout, critical pathways, interdependency among work components, ways of coordinating and managing its work, and other work elements.[4, 7] This can be compounded when temporary workers do not receive the same level of orientation and training from the organization in which they provide care as do the organization's employees. Studies in industries outside of health care have found that increased use of contingent workers can result in higher accident rates and other adverse effects.[4] The International Atomic Energy Agency, for example, cites use of contract personnel to replace traditionally hired employees as a symptom of incipient weakness in an organization's safety culture.[8] Health care researchers find similar results.

Research Evidence

Searching health care literature for the effects of contingent nursing staff on patient safety and other quality of care outcomes is difficult because of the various terminologies used to refer to such workers: for example, temporary, float, casual nursing, contingent employment, or precarious employment. Moreover, health care research, unlike research on the impact of

temporary employees across a variety of other industries, typically has not exclusively examined the effects of temporary workers on patient safety and care quality. Findings are typically embedded in studies of more comprehensive issues such as the effects of nurse staffing or health care organization practices.

The search strategy (see below) resulted in finding seven observational studies; of which six studies reported adverse patient outcomes associated with the use of contingent nurses[7, 9–13] (see evidence table). The seventh study, which did not find adverse patient outcomes,[14] did not measure patient outcome directly, but rather examined nurses' documentation of their own performance of activities related to patient safety and better quality of care—the lowest level of outcome measured for all seven studies. The findings of the seventh study also were confounded by the provision of specialized training in the legal ramifications of documentation to only two of the three groups under study—the groups that subsequently performed at the highest level.

Although it is possible that the findings of six of seven studies showing adverse effects of using agency nurses are a manifestation of reporting bias (i.e., multivariable studies that did not find a difference in the use of contingent nurses might not report the finding of no difference), the evidence cited in these studies does not support this possibility. Five of the seven studies examined variables in addition to staffing composition and their effects on bloodstream infection, 30-day mortality, medication errors, and violence committed by psychiatric patients. All five of these identified and reported on variables for which "no difference" in patient care or outcomes was found.

Evidence-Based Practice Implications

The IOM report identified the need for all health care organizations to have in place mechanisms to achieve "flexible" staffing in instances when the patient census, acuity, or both demand staffing at a higher level than anticipated. However, the research included in the aforementioned analysis reaffirms the importance of avoiding the use of nursing staff from external sources as a mechanism to provide such flexible staffing. The IOM recommends using internal nursing "float pools" composed of nurses employed by the health care organization. Although using floating nurses may still result in nurses being assigned to patient care units with which they are less familiar, using an organization's own float pool of employed nurses at least assures that these nurses have received the same orientation and in-house training as other nursing staff permanently assigned to specific nursing units. Float pools would also assure that, even if the floating nurses are not familiar with policies and procedures unique to individual patient care units within the organization, the nurses would be familiar with organization-wide policies and practices pertaining to patient safety, such as an organization's error reporting system, decision-support systems, and information technologies.

Research Implications

Research on temporary and agency nurses could benefit from a meta-analysis to determine how strong the effect may be between using external nurses and patient safety and outcomes. Additional research could be conducted to further build the evidence base pertaining to the effect on patient care outcomes of using contingent nurses to meet staffing demands. However, research is also needed to understand the reasons for the use of contingent workers in health care in the first place. Such research can inform policy decisions by health care organizations and

other entities affecting workforce deployment. Are contingent workers preferred by health care organizations? If so, why? To what extent is increasing use of contingent nursing staff caused by the same factors leading to increased use of contingent workers globally across myriad industries, or are there unique factors at play in nursing? Do nurses employed by temporary agencies prefer this type of employment? If so, why? Can these factors be replicated in health care organizations to bring contingent workers into standard employer–employee relationships with health care organizations? If nursing staff employed by temporary agencies do not prefer this employment, why are nurses so employed in the face of a widely cited nursing shortage?

Conclusions

Whether temporary workers or float pools are used to meet staffing shortfalls, hospital managers and leaders are challenged to ensure patient safety by matching the available skill mix of nurses to the needs of patients. The flexibility offered by temporary workers may address staffing gaps, but it is important to have effective communication, education, and orientation mechanisms to enable comprehensive, safe patient care by outside nursing staff. More research is needed on the effects of contingent nursing staff on patient safety and the reasons for the use of contingent workers.

Search Strategy

A search of MEDLINE®, CINAHL®, the Cochrane Registry of Controlled Trials, and the Cochrane data base of systematic reviews for the period January 1990–March of 2006 using the search terms (temporary OR contingent) AND (staff OR personnel OR nurs$) in all fields for human studies and English-language articles yielded 809 articles. Five of these titles or abstracts described a research study that included measures of the effects of contingent nurses on patient safety or clinical quality outcomes.[7, 9–11, 14] A repeat of this search using (float OR casual) in place of (temporary OR contingent) generated 181 references, which yielded an additional research study with these variables.[12] A similar search within PychoINFO yielded 178 references, of which one was a previously undetected research study examining use of temporary nurse staffing and patient outcomes.[13] All searches were mediated through the OVID search engine. Studies measuring only nurse outcomes (e.g., occupational injuries, job satisfaction, or features of work design) were excluded, although there is literature showing adverse outcomes in these areas as well.

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Evidence Table

Source	Safety Issue Related to Clinical Practice	Design Type	Study Design, Study Outcome Measure(s)	Study Setting & Study Population	Study Intervention	Key Finding(s)
Alonso-Echanove 2003[7]	Use of float nurses – agency nurses or nurses from other hospital areas who had been working in the unit under study for less than a year.	Prospective cohort	Level 3 study design. Level 1 outcome measure: central venous catheter (CVC) bloodstream infections (BSIs)	4,535 adult patients admitted for at least 24 hours in 1997–1999 to eight Intensive care units at six geographically distinct hospitals	Observational study – no intervention	Of more than 60 potential risk factors studied, portion of days cared for by a float nurse was one of only six statistically significant (*P* <.005) variables strongly associated with the development of CVC-BSIs in patients. Risk of CVC-associated BSI was 2.6 times higher for patients cared for by float nurses more than 60% of the time.
Bourbonniere 2006[11]	Use of a high proportion of contract nurses (RNs and LPNs combined) to fill nurse staffing positions. High proportion was defined as 5 percent or more of total full-time equivalent nursing positions.	Cross-sectional, time series	Level 4 study design. Level 3 or higher outcome measures; i.e., study measured health care quality deficiencies detected in nursing homes as part of their State 's annual survey and certification inspection process.	15,717 freestanding nursing homes (facilities) in urban and rural counties in the United States between 1992 and 2002.	Observational study – no intervention	Annually, facilities using 5 percent or more contract RNs and LPNs were disproportionately represented in the top quartile of nursing facilities ranked in each State according to health care deficiencies detected during annual State survey and certification inspections. For each calendar year these differences were statistically significant($P < 0.05$).
Estabrooks 2005[9]	Use of temporary or casual nurses in hospital staffing.	Cross-sectional	Level 4 study design. Level 1 outcome measure: 30-day mortality following admission	18,142 patients discharged from 49 of 109 acute care hospitals in Alberta Province, Canada	Observational study – no intervention	Hospitals with a higher proportion of casual and temporary nurses had higher rates of 30-day patient mortality (odds ratio = 1.26, 95% confidence interval of 1.09 to 1.47).

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James 1990[13]	Use of agency (temporary) nursing staff	Retrospective cohort	Level 4 study design. Levels 1 and 2 outcome measures: any act of violence, defined as physical aggression involving physical contact directed at fellow patients, staff, self, or property.	All acts of violence occurring in a 12-bed "high dependency" ward within a 60-bed psychiatric unit in a district general hospital in London, England, during January 1986 through March 1987 (15 months).	Observational study – no intervention	A greater than three-fold increase in violent incidents over the study period was strongly associated with a decline in the number of permanent nursing staff employed by the hospital and an increase in the use of agency nurses, despite the maintenance of a constant level of nurse staffing. Study found a positive correlation between the number of violent incidents and use of agency nurses ($P = 0.0018$) and agency nursing shifts ($P = 0.0005$), and a negative correlation between the number of violent acts and levels of permanent nursing staff ($P = 0.0007$).
Robert 2000[12]	Use of nurses from an external agency or from a hospital pool compared to nurses permanently assigned to the surgical intensive care unit (SICU)	Case-control study	Level 4 study design. Level 1 outcome measure: nosocomial bloodstream infections (BSIs)	28 patients with BSIs and 99 randomly selected controls in a 20-bed SICU in a 1,000 bed, university-affiliated, inner-city, public teaching hospital. Cases were any patient hospitalized in the SICU for 3 or more days from June 1994 to June 1995 in whom a primary BSI was identified.	Observational study – no intervention	BSIs were significantly ($P < 0.004$) more frequent during the period of high use of nurses from the external agency or hospital float pool and low use of permanently assigned nursing staff. The pool nurse-to-patient ratio was significantly higher for case patients ($P < 0.001$) than for controls. Conversely, the regular nurse-to-patient ratio for the 3 days prior to infection was significantly lower for case patients than control patients) ($P < 0.001$).

Source	Safety Issue Related to Clinical Practice	Design Type	Study Design, Study Outcome Measure(s)	Study Setting & Study Population	Study Intervention	Key Finding(s)
Roseman 1995[10]	Use of temporary nurses	Cross-sectional	Level 4 study design. Level 2 outcome measure: medication errors	All medication errors reported in a 140-bed acute care medical center in Alaska from 1984 to1989.	Observational study – no intervention	Number of shifts worked by temporary staff was positively (and statistically significantly) associated with medication errors (odds ratio = 1.15). Errors decreased when permanent nursing staff worked overtime (odds ratio = 0.85).
Strzalka 1996[14]	Use of nurses from external agencies, compared to internal float pool nurses and nurses hired by the organization to staff a specified nursing unit under study (unit-hired nurses)	Prospective cohort	Level 4 study design. Level 3 outcome measure: Nurses' documentation that they performed nine activities determined by the facility as related to patient safety (e.g., side rails raised, assessment of mental status, vital signs, etc.) and related to bowel management.	All agency nurses and two randomly selected comparison groups of internal float and unit-hired nurses providing care on one nursing unit in a large teaching hospital in the United States over an 8-month period.	Observational study – no intervention	Nursing groups' documentation varied from indicator to indicator, with internal float pool nurses generally documenting at the highest level and unit-hired nurses performing at the lowest, with agency nurses falling in between. Differences were often minimal and were statistically significant (at the $P < 0.05$ level) for only five of the nine documentation activities. Agency nurse reporting was significantly lower than float pool nurses on only two measurement items.