



**BLOOMBERG**  
LAWRENCE S. BLOOMBERG  
FACULTY OF NURSING  
UNIVERSITY OF TORONTO

**Nurse Staffing Research: Informing  
Decision-Making on Models of  
Care**

Lost in Knowledge Translation: Innovations in Health  
Human Resources Policy  
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Linda McGillis Hall, PhD, FAAN  
Professor and MOHLTC Nursing Senior Career Scientist  
Associate Dean of Research & External Relations

**Studying This Area**

- What effect do nurses have on patients?
- What patient care outcomes result from nursing actions?
- What is the evidence?
- How is this evidence being applied?

## Earliest Evidence

- Much of earlier work in this field focused on linking nurse staffing to patient outcomes
- Decreased mortality rates in hospitals with higher proportions of RNs in data from 3100 hospitals in US (*Hartz & Krakauer, 1989, NEJM*)
- 1996 US Institute of Medicine Report on *“Nurse Staffing in Hospitals and Nursing Homes: Is it Adequate?”* led to tremendous amount of research in the area

## What We Know

- **Consistent evidence** exists to link higher levels of nurse staffing to **patient outcomes** in acute care settings
- Numerous studies (> 20)
- Published in a variety of journals

## Patient Outcomes Studies

Higher levels of nurse staffing in acute care settings related to decreased:

- pressure ulcers (*ANA, 1997, 2000; Blegen et al., 1998*)
- urinary tract infections (*ANA, 1997, 2000; Kovner & Gergen, 1998; Needleman et al., 2002; Unruh, 2003*)
- postoperative wound infections (*ANA, 1997, 2000; McGillis Hall et al., 2004*)
- pneumonia (*ANA, 1997, 2000; Cho et al., 2003; Kovner & Gergen, 2002; Needleman et al., 2002; Unruh, 2003*)
- medication errors (*McGillis Hall et al., 2004; Whitman, 2002*)

## Patient Outcomes Studies

Higher levels of nurse staffing in acute care settings related to decreased:

- upper GI bleeding (*Needleman et al., 2002*)
- restraint use (*Whitman et al., 2002*)
- pulmonary compromise (*Unruh, 2003*)
- cardiac arrest or shock (*Needleman et al., 2002*)
- falls (*Dunton, 2004; Krauss et al., 2005; Unruh, 2003; Whitman et al., 2002*)
- failure to rescue (*Aiken et al., 2002, 2003; Needleman et al., 2002; Seago et al., 2006*)

## **Patient Outcomes Studies**

Higher levels of nurse staffing in acute care settings related to decreased:

- mortality (*Aiken et al., 2002, 2003; Elting et al., 2005; Estabrooks et al., 2005; Mark et al., 2004; Newhouse et al., 2005; Person et al., 2004; Rothberg et al., 2005*)

## **Challenge With the Evidence**

- The amount of what this “higher” level of nursing staff is – has not been identified
- It may not static
- Important to give consideration to work environment and demographics of nurses (e.g. experience, education)

## Work Environments

- The nursing work environment has been characterized as contributing to serious threats to patient safety related to organizational management practices, workforce deployment, work design and organizational culture

*(Page, 2004; IOM Report  
"Keeping Patients Safe: Transforming the Work Environment of  
Nurses")*

## Discussion

- Canada is anticipating a shortage of 60,000 RN FTEs by 2022 (CNA, 2009)
- Recent trends in 'models of care' across the country
- How is the research evidence informing these 'model of care' decisions?

