

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

Nursing Resources, Workload, the Work Environment and Patient Outcomes

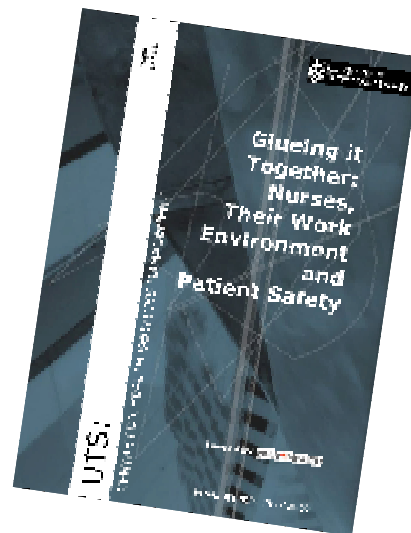
NDNQI Conference 2010

Christine Duffield, Michael Roche, Donna Diers

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

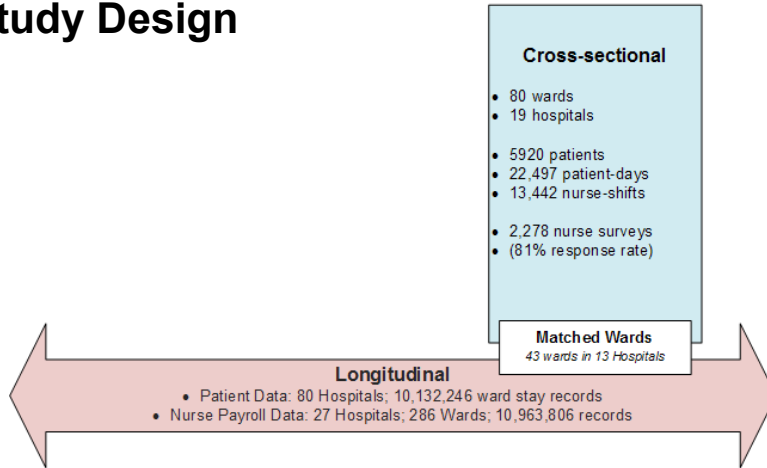
Study Team

Professor Christine Duffield
Michael Roche
Professor Linda O'Brien-Pallas
Professor Donna Diers
Chris Aisbett
Dr Madeleine King
Kate Aisbett
Professor Jane Hall



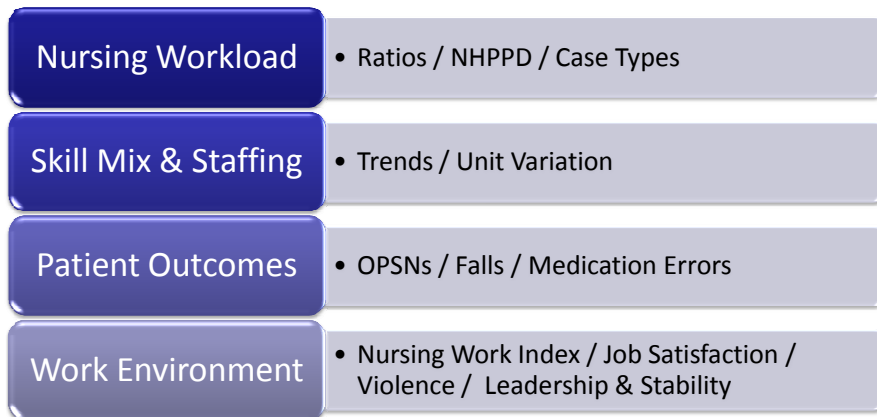
UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

Study Design



UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

Data Analysis



UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**1. Nursing Workload: Acuity & ALOS**

- Patient acuity increased on medical and surgical units
- ALOS across all 80 hospitals decreased from 78.3 to 77.6 hours across all case types
 - Concentrating nursing care into a shorter period

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**1. Patient Movements & Case Types**

- Patient movements increased from an average of 2.10 units/wards per patient per episode to 2.26
- The average number of patients per bed per day was 1.25
- The average number of case types (DRGs) per nursing unit per year increased

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**1. Nursing Hours Per Patient Day**

- Nursing hours/patient day (NHPPD) were highly variable
 - Mean 5.1
 - Range 2.7 – 10.9
- On average approximately one additional hour of care per day, above that provided, was needed for each patient

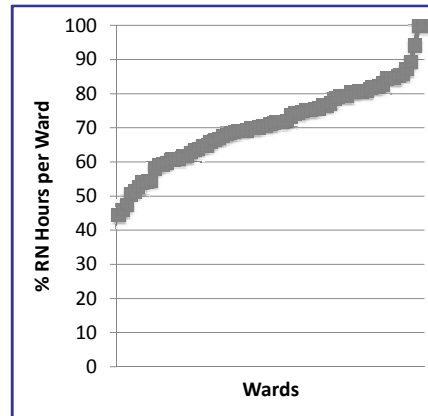
UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**1. Nurse: Patient Ratios**

- **All nursing staff**
 - AM – Mean **3.8** (1.7 – 6.7)
 - PM – Mean **4.5** (1.8 – 12)
 - Night – Mean **8.2** (3.3 – 19)
- **RN staff only**
 - AM – Mean **5.7** (2.2 – 14.7)
 - PM – Mean **6.6** (2.2 – 21.3)
 - Night – Mean **11.8** (3.7 – 36)
- Nurses caring for > 8 patients vs < 4 results in a 30% increased chance of dying
- Their capacity to provide surveillance decreases as patient numbers increase (Aiken et al. 2003)

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

2. Skill Mix & Staffing Trends

- Increased RNs in specialised units
 - ED, ICU
- Medical, surgical & general units
 - Maintained the same proportion of RN hours to patient hours
 - BUT patient movements and acuity have increased on those units



UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

3. Patient Outcomes

- OPSN
 - Decubitus ulcers, gastrointestinal bleeding, sepsis, shock, physiologic/metabolic derangement, pulmonary failure and failure to rescue
 - » (Needleman et al., 2001; 2002)
- Falls
- Medication errors

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

3. Patient Outcomes

A higher proportion of RNs resulted in decreased rates of:

- Decubitus ulcers, gastrointestinal bleeding, sepsis, shock, physiologic/metabolic derangement, pulmonary failure and failure to rescue
- Fewer falls

Fewer medication errors when:

- The proportion of planned admissions increased
- The proportion of nurses working on their "usual" ward increased
- A clinical nurse educator was present on the ward

Decreased adverse events (falls, medication errors, pneumonia) with:

- Specialist nursing support (CNCs)
- A clinical nurse educator on the ward
- More hours of housekeeping

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

4. The Work Environment

- Nursing work index (NWI-R)
 - Autonomy
 - Freedom to make important patient care and work decisions
 - Control over practice
 - Adequate support services allow me to spend time with my patients
 - Nurse-doctor relationships
 - Collaboration between nurses and physicians
 - Resource adequacy
 - Enough registered nurses on staff to provide quality patient care
 - Leadership
 - A nurse manager or immediate supervisor who is a good manager and leader
 - » (Aiken & Patrician, 2000)
- Environmental Complexity Scale
 - Unexpected changes in acuity
 - Resequencing of work
- Nurse Demographics & Experience
- Job Satisfaction
- Violence

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**4. Satisfaction with the Job and Nursing**

- Most nurses (67%) were satisfied with their current position and were not intending to leave
- Even more (72%) were satisfied with their chosen profession
- Higher levels of nurses' satisfaction with the profession were linked to increased nurse autonomy and better relationships with doctors
- RNs were less satisfied with nursing than all other categories of nurse

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**4. Violence & Abuse**

- During the last five shifts:
 - More than one-third of nurses reported experiencing recent emotional abuse and about 1 in 5 nurses reported threats of physical harm
 - More than one in 10 reported actual physical abuse
 - The source of violence was nearly exclusively patients and families
- Patient outcomes:
 - Patients were more likely to experience a medication error or other adverse outcomes where nurses experience physical violence or threat of violence

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**4. Tasks Delayed**

- Nurses reported an average of 1.4 tasks delayed and 1.7 not done – per nurse per shift
- Tasks delayed or not done were statistically linked to
 - Increased unanticipated changes in patient acuity
 - Decreased resource adequacy (NWI-R)
 - Decreased specialist nursing support (CNSs)
- Patient outcomes:
 - Nurses delaying the completion of tasks linked to increased rates of adverse events

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**4. Nursing Leadership**

- Good nursing leadership was linked to:
 - Job satisfaction
 - Satisfaction with nursing
- Nurses who experienced good leadership on the ward:
 - Were less likely to intend to leave their current job

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

4. Ward Stability

- Adverse patient outcomes increased as ward environments became less stable
 - Fewer permanent staff
 - Fewer nursing hours per patient day
 - Decreased perception of nurse leadership
 - No nurse educator support
 - More patients per bed
 - Higher levels of perception of violence

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

In Summary

- Skill mix (the proportion of RNs) is more critical to patient outcomes than hours of nursing provided
- Stability of the ward environment improves patient outcomes
- Good nursing leadership enhances the work environment

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT

“My discovery, as a patient first on a medical service and later in surgery, is that the institution is held together, glued together, enabled to function as an organism, by the nurses and by nobody else...”

- Lewis Thomas, MD,
- *The Youngest Science*, (1983 p.67)

UTS:CENTRE FOR HEALTH SERVICES MANAGEMENT**Publications from this Research**

- Duffield, C. M., Diers, D., O'Brien-Pallas, L., Aisbett, C., Roche, M. A., King, M. T., et al. (In Press). Nursing Staffing, Nursing Workload, the Work Environment and Patient Outcomes. *Applied Nursing Research*. Accepted December 2009.
- Duffield, C. M., Roche, M. A., Blay, N., & Stasa, H. (In Press). The work environment, nursing unit managers, and staff retention. *Journal Of Clinical Nursing*. Accepted December 2009.
- Duffield, C. M., Roche, M. A., Diers, D., Catling-Paull, C. J., & Blay, N. (In Press). Staffing, skill mix and the model of care. *Journal Of Clinical Nursing*. Accepted November 2009.
- Duffield, C. M., Roche, M. A., O'Brien-Pallas, L. L., Catling-Paull, C., & King, M. T. (2009). Staff satisfaction and retention and the role of the Nursing Unit Manager. *Collegian*, 16(1), 11-17.
- Duffield, C. M., Roche, M. A., O'Brien-Pallas, L. L., & Catling-Paull, C. (2009). The implications of staff 'churn' for nurse managers, staff, and patients. *Nursing Economic\$, 27(2)*, 79-86.
- Duffield, C. M., Diers, D. K., Aisbett, C., & Roche, M. A. (2009). Churn: Patient turnover and casemix. *Nursing Economic\$, 27(3)*, 185-191.
- Roche, M., Diers, D., Duffield, C. and Catling-Paull, C. (In Press) Violence toward nurses, the work environment and patient outcomes. *Journal of Nursing Scholarship*. Accepted July 2009.
- Roche, M. A., & Duffield, C. M. (In Press). A Comparison of the Nursing Practice Environment in Mental Health & Medical-Surgical Settings. *Journal Of Nursing Scholarship*. Accepted October 2009.