

## **Impact of Staffing Levels on Outcomes**

### **Research Question:**

What is the impact of differing staffing levels on the rates of mortality in hospitals?

### **Background.**

Whatever country is examined, the remarkable fact is that similar hospitals and similar wards within and between hospitals have very different levels of staffing. What are the costs and benefits of this variation? Does economy in staffing and costs, generate similar patient outcomes as more “generous” staffing levels? Or does frugal staffing lead to increased risk of patient mortality and other damage? Where is the cut off beyond which increased staffing gives no patient benefits in terms of better outcomes? What is the correlation and causation, if any, between the nurse staffing and the standardised mortality ratio (SMR)?

### **References:**

The Conference position paper could be based on articles such as:

- 1) Bell and Redelmeier used Canadian data to address the issue of whether mortality amongst patients admitted during the weekend was greater than those admitted during the working week (NEJM 345,9,663-668). They found evidence of a weekend effect and the nice issue is whether this is related to staffing levels, and if so how and what should policy makers do? The running of hospitals as five day institutions may be killing patients in all our countries. This assertion is easily tested but has not been investigated except in this case of one Canadian hospital. Should hospitals, like supermarkets, be run on a seven day basis with appropriate staffing?
- 2) Halm and Chassin asked the question in their NEJM paper of the same date, why do hospital death rates differ? (345,9,692-94). They cite the following website which looks at the evidence on nurse staffing and patient outcomes :<http://bhpr.hrsa.gov/dn/staffstudy.htm>. Reading this you will see that the evidence base is poor.
- 3) Needleman et al analysed the relationship between nurse staffing levels and the quality of care in hospitals (NEJM 346,1715-22, May 30<sup>th</sup>, 2002 and see also the editorial in the same issue by Steinbrook). Needleman et al concluded “a higher proportion of nursing care provided by registered nurses and a higher number of hours of care by registered nurses per day are associated with better care for hospitalised patients”

- 4) In the UK Jarman et al (BMJ 1999) have also highlighted the relationship between staffing and outcomes. Jarman applied this work in the Bristol inquiry into the deaths associated with deficient technique used in paediatric cardiac surgery. He has also worked with a team at Imperial College (University of London) in association with a private firm, Dr Foster, which annually publishes data on hospital staffing and standardised mortality rates of institutions. He finds that higher SMRs are associated with lower levels of staffing.

**The following questions might be addressed after a very brief description of staffing variations between and within institutions in each country:**

- 1) What does the literature show about the link between staffing of hospitals (in particular, but not always, nurse staffing) and measures of “success” such as mortality?
- 2) Are the data sources and the methods of analysis valid and robust?
- 3) How should this research be developed?
- 4) What are the implications for health care policy?