HOSPITAL NURSE STAFFING AND PATIENT OUTCOMES

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SUMMARY

RN4CAST-Chile builds upon two decades of global nursing outcomes research and the successful implementation of the RN4CAST study in 30 countries around the world to replicate this research for the first time in South America. Over 70 scientific papers in leading nursing and interdisciplinary journals have resulted just from the RN4CAST-EU study, making it the most productive study ever funded by the European Commission (www.rn4cast.eu). The results of this program of research have been influential in changing clinical practice, managerial policies, and governmental policies in many countries. Based upon the establishment of a link between lower patient to nurse ratios and better patient outcomes, a number of jurisdictions and countries have adopted safe nurse staffing standards including California in the U.S., Victoria and Queensland in Australia, Ireland, and Wales. Documentation that a nurse workforce qualified at least at the bachelor's level is associated with better patient outcomes including lower hospital mortality has been the catalyst for U.S. hospitals working toward a target date of 2020 to achieve at least a 80% bachelor's educated nurse workforce. The European Parliament for the first time approved a bachelor's pathway for nurse education. Additionally research from RN4CAST and its predecessor studies has been influential in creating the evidence base in support of redesigning clinical work environments to provide greater involvement of clinicians in institutional policy decisions and better managerial support to reduce operational errors in clinical settings that detract from nurses, doctors, and others providing safe clinical care. Chile will soon have comparable data to inform evidence-based decisions that hold promise for improving the outcomes of its health services.

Key words: Education, nursing education, nurse´s role, professional role and nurse's role, self-care effectiveness.

INTRODUCCTION

A landmark study by the U.S. Institute of Medicine published in 1999 called the world's attention to the high incidence of patient harm associated with the delivery of medical care (1). It estimated

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that medical errors in the U.S. were among the top five leading causes of death. The World Alliance for Patient Safety was formed shortly thereafter by the World Health Organization to encourage global responses to the reduction of patient harm that was thought to be a leading cause of disease burden globally (2). A program of international research by the Center for Health Outcomes and Policy Research at the University of Pennsylvania, USA, was undertaken to determine whether variation in hospital registered nurse (RN) staffing across hospitals contributed to poor patient outcomes (3). This program of research has been implemented in 30 countries to date in various parts of the world including the latest replication a national sample of hospitals in Chile.

The purpose of this paper is to summarize the key findings from this program of research, often referred to as RN4CAST after the 15 country European Union funded study of the impact of nursing on hospital outcomes in Europe. We also describe the study that is now underway in Chile, known as RN4CAST-Chile. The study in Chile is expected to produce important and actionable findings, that if implemented, hold promise for improving the culture of patient safety in hospitals and resulting in better patient outcomes.

PATIENT OUTCOMES VARY BY HOSPITAL

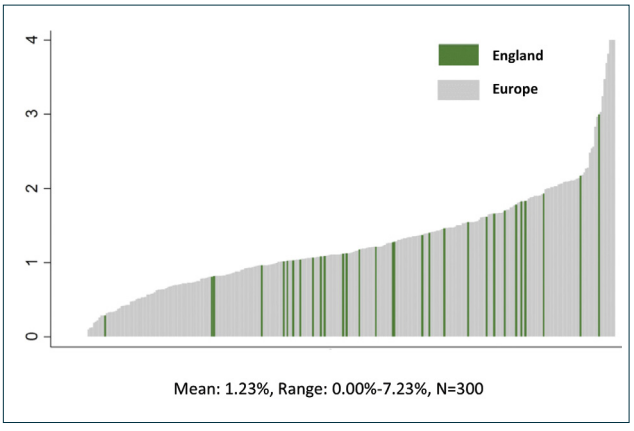
Research shows that within the same country that patient outcomes vary substantially by hospital, after taking into account that some hospitals care for sicker patients than others. The popular magazine Consumer Reports, for example, recently published an analysis of death rates in U.S. hospitals for elderly patients admitted for treatment of common acute medical conditions—pneumonia, heart failure, acute myocardial infarction—and surgery (4). Death rates for patients with these conditions were twice as high at some hospitals than for others. We found the same significant differences in death rates following common surgical procedures across 300 representative hospitals in nine European countries (5). Indeed, the differences in mortality across hospitals within country were larger than the mean differences across countries. Figure 1 illustrates this relationship by highlighting that the mortality rates for the 46 participating hospitals in England, which has a centralized national health system, vary as much as the 300 hospitals in 9 different European countries.

NURSE STAFFING LEVELS AND HOSPITAL MORTALITY

Throughout this paper when we use the term "nurse", we are referring to fully qualified professional nurse, or registered nurse (RN). We also found considerable variation in patient-to-nurse ratios across hospitals within every country we have studied. In England, for example, the average patient-to-nurse ratios for all hospitals was 8.6 but varied 5.6 patients-per-nurse to 11.5 patients-per-nurse (6). We have found similarly wide variation in patient-to-nurse ratios across hospitals in every country we have studied.

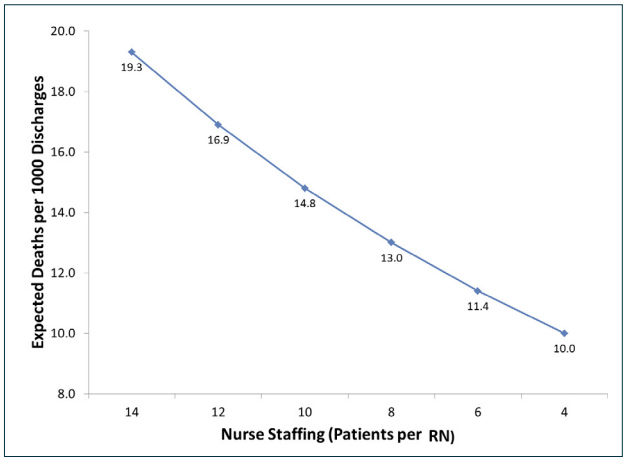
Two systematic reviews have concluded that there is strong evidence of a significant association between better nurse staffing and lower mortality (7-8). We have found across all the countries we have studied, including the U.S., Canada, England, Belgium, South Korea, and nine countries in Europe, significant associations between lower patient-to-nurse ratios and lower risk-adjusted mortality (5, 9-14). Each one patient added to a nurse's workload is associated with a 7 percent increase in risk-adjusted mortality following general surgery. Figure 2 presents in visual form the relationship between patient to nurse staffing and expected deaths per 1000 discharges from the RN4CAST-EU study of 300 hospitals in 9 European countries.

FIGURE 1. IN-HOSPITAL MORTALITY VARIES MORE WITHIN COUNTRIES THAN BETWEEN COUNTRIES: EXAMPLE ENGLAND



Source: Center for Health Outcomes and Policy Research, University of Pennsylvania School of Nursing.

FIGURE 2. EXPECTED DEATH PER 1000 DISCHARGES AT DIFFERENT STAFFING LEVELS



Source: Aiken LH, et al. Association of nurse staffing and education with hospital mortality in 9 European countries. The Lancet 2014;383: 1824-30