

## Paper Session A4: Contemporary Issues in RN Staffing

### *The Effects of State Mandated Nurse-To-Patient Ratios for Hospitals on Nurse Staffing and Skill Mix*

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**Purpose:** California is the first and thus far only state to implement comprehensive minimum nurse-to-patient ratios aimed at increasing hospital nurse staffing. Other states are looking to California's experience before implementing similar policies to improve quality of care, safety, and nurse retention. In addition to fixed unit level ratios, Assembly Bill 394 (AB 394) allows hospitals to staff up to 50% of their required staff with Licensed Vocational Nurses, a nuance that could negatively affect nursing skill mix and thus health outcomes. While prior research shows that staffing in California has increased over time, there is no comparative evidence demonstrating the increase is attributed to the staffing mandate or analyzing the mandate's effect on skill mix. Our aim was to determine the effect of comprehensive fixed nurse-to-patient ratios on staffing and to evaluate whether the policy created an incentive to shift employment to lower skilled nurse labor.

**Theoretical Framework:** Quality-Health-Outcomes model.

**Methods:** Implementation of AB 394 created a 'natural experiment' whereby the effect of the mandate can be assessed by comparing changes before and after implementation in California and against changes in states without a similar policy. Controlling for hospital and market characteristics, our approach used a quasi-experimental interrupted time-series design with multiple non-equivalent no-treatment control groups to analyze hospital nurse staffing ratios, nursing skill mix, and control variables in all adult, non-federal, acute care hospitals in the United States. A longitudinal panel data set was constructed for analysis for the time period 1997-2008 from the American Hospital Association Annual Survey data. Separate hospital-level fixed-effects regression models were used to estimate the impact on California compared to the states with the second through fifth most hospitals in the U.S. (TX, NY, FL, and PA).

**Results:** Staffing has significantly increased in California pursuant to the staffing mandate, evidenced by a statistically significant increase over comparative states and nationwide increases in staffing. Our findings show no evidence of an overall decline in skill mix as a result of AB 394.

**Conclusions:** California's nurse-to-patient ratios law has been an effective mechanism for meeting the immediate policy objective of increasing hospital nurse staffing, which must occur before any patient outcomes benefit can reasonably be expected.