

Perception vs. Reality: The Truth About Temporary Nurses

Center for Health Outcomes Research
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Presented to you courtesy of:

L. Aiken, Univ. of Pennsylvania

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Presentation based on the
research paper:

Aiken and colleagues,
Supplemental Nurse Staffing in
Hospitals and Quality of Care, *JONA*
July/August 2007

Practice Dilemma

- AHRQ Hospital Survey on Patient Safety Culture, 2006: 67% of staff surveyed felt their units used more agency staff than was best for patients, BUT
- Am Hosp Assoc, 2001: 56% of hospitals used agency nurses
- Community Tracking Study, 2006: 75% of participating hospitals used supplemental nurses

Supplemental Staffing

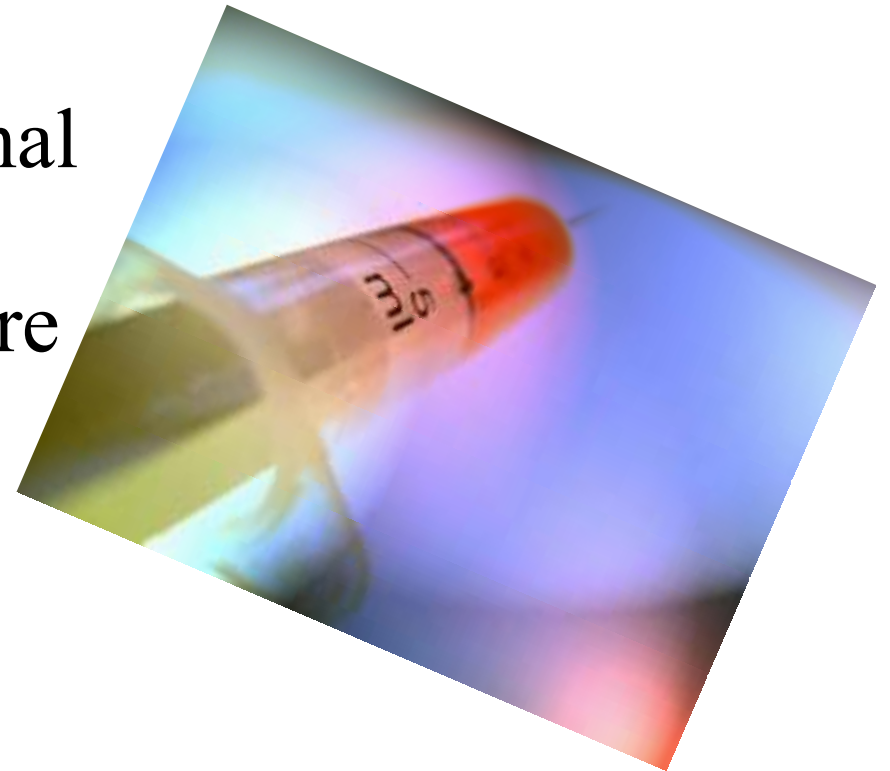
- Supplemental nurse staffing could potentially contribute positively to improved health care outcomes, but ...
- Supplemental nurse staffing is perceived negatively by management and nurses
- Questions about impact of supplemental staff on quality of care, satisfaction of permanent staff, and cost implications
- Little rigorous research on outcomes of supplemental staffing to guide practice

Research on Supplemental Nurse Staffing

- Relatively few research studies exist on the outcomes of supplemental nurse staffing
- Of the few studies that consider supplemental staffing at all, most use supplemental staffing as a proxy for poor quality
- Example: longer length of hospital stay is usually used in research as a negative outcome signifying poor quality of care much the way the use of temporary nursing staff is used by researchers as a negative outcome

Aiken et al. (1997) Hospital Nurses' Occupational Exposure to Blood. Am. J. Public Health

- Calculate risk of hospital staff nurse exposure to blood borne pathogens by needle/sharps injuries
- Determine organizational factors that reduce or increase risk of exposure
 - Finding: Temporary nurse staffing was related to higher injury rates



Disconnect Between Two Research Literatures

- Research consensus: Better nurse staffing is associated with better patient outcomes (Kane et al., 2007, AHRQ)
- A few studies implying negative associations between supplemental nurse staffing and outcomes
- How can these two findings be reconciled?

Nurse Staffing and Mortality

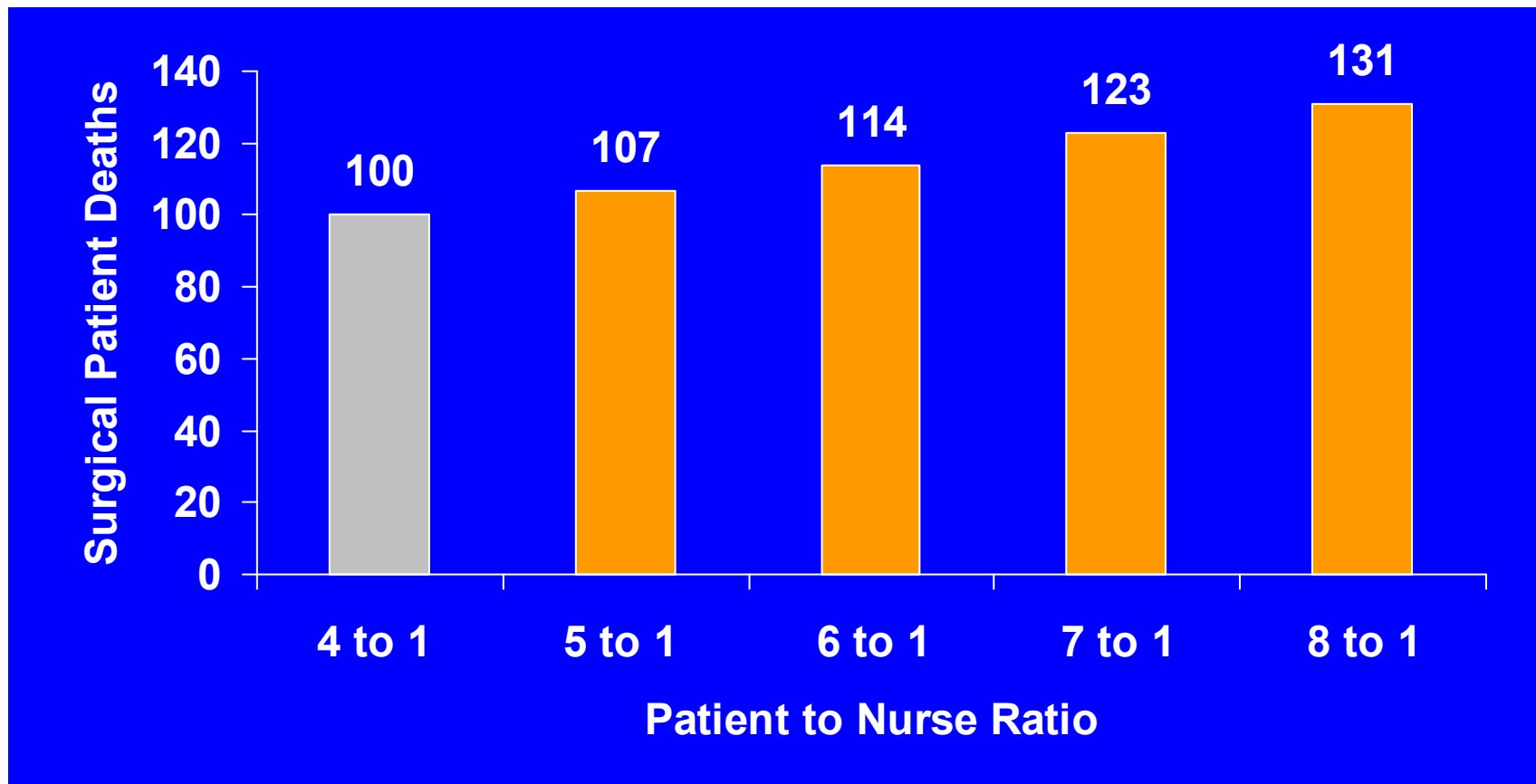
Aiken et al., 2002 JAMA

- Every one additional patient added to a hospital staff nurse's workload is associated with 7% increase in hospital mortality



For every 100 surgical patients who die in hospitals with 4 to 1 patient-to-nurse ratios, the number who would die in hospitals with higher ratios would be...

(L. Aiken et al. JAMA 2002)



L. Aiken, Univ of Pennsylvania

How Could Having More Nurses, Even if Temporary Ones, Negatively Affect Patient Outcomes?



Posing the Outcomes Questions From a Different Perspective

- Our research is trying to disentangle cause and effect related to supplemental staffing and quality of care.
- Could the poor outcomes that sometimes seem to be associated with use of temporary or supplemental nurses be associated with unmeasured factors, including institutional deficiencies?
- Our research examines the extent to which poor outcomes, if found, can be explained by factors other than temporary or supplemental staff utilization.

Research Definition of “Supplemental”

- All non-permanent registered nurses working in hospitals as staff nurses
 - Travelers
 - Per diem (agency or hospital pool)
 - Float staff

Are Supplemental Nurses Less Qualified?

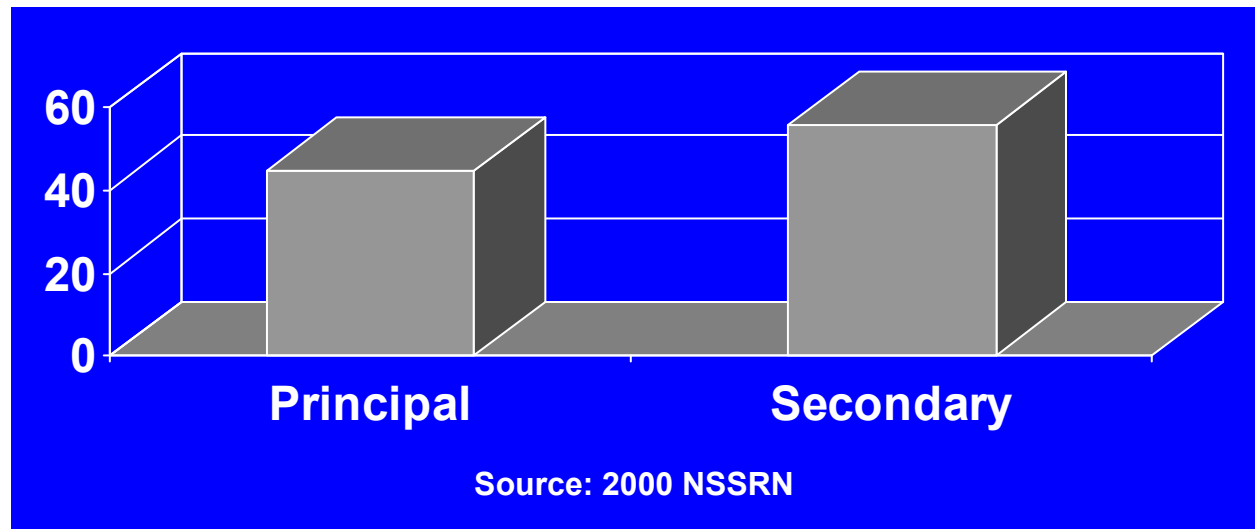


2000 National Sample Survey:
6% (50,000) hospital staff nurses
nationally were employed by
supplemental staffing agencies



Supplemental Staffing: Principal or Secondary Employment

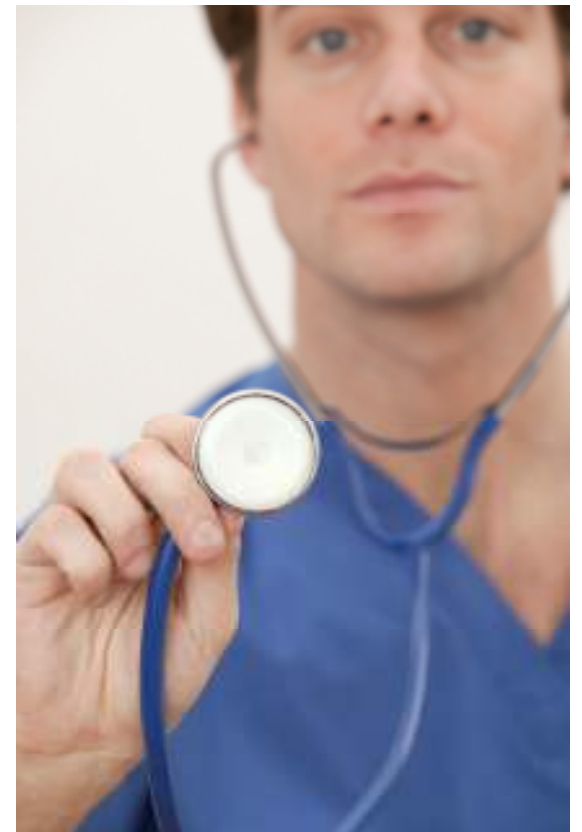
- **Distribution of supplemental staff company as principal or secondary employer**
 - **Principal : 45%**
 - **Secondary: 56%**



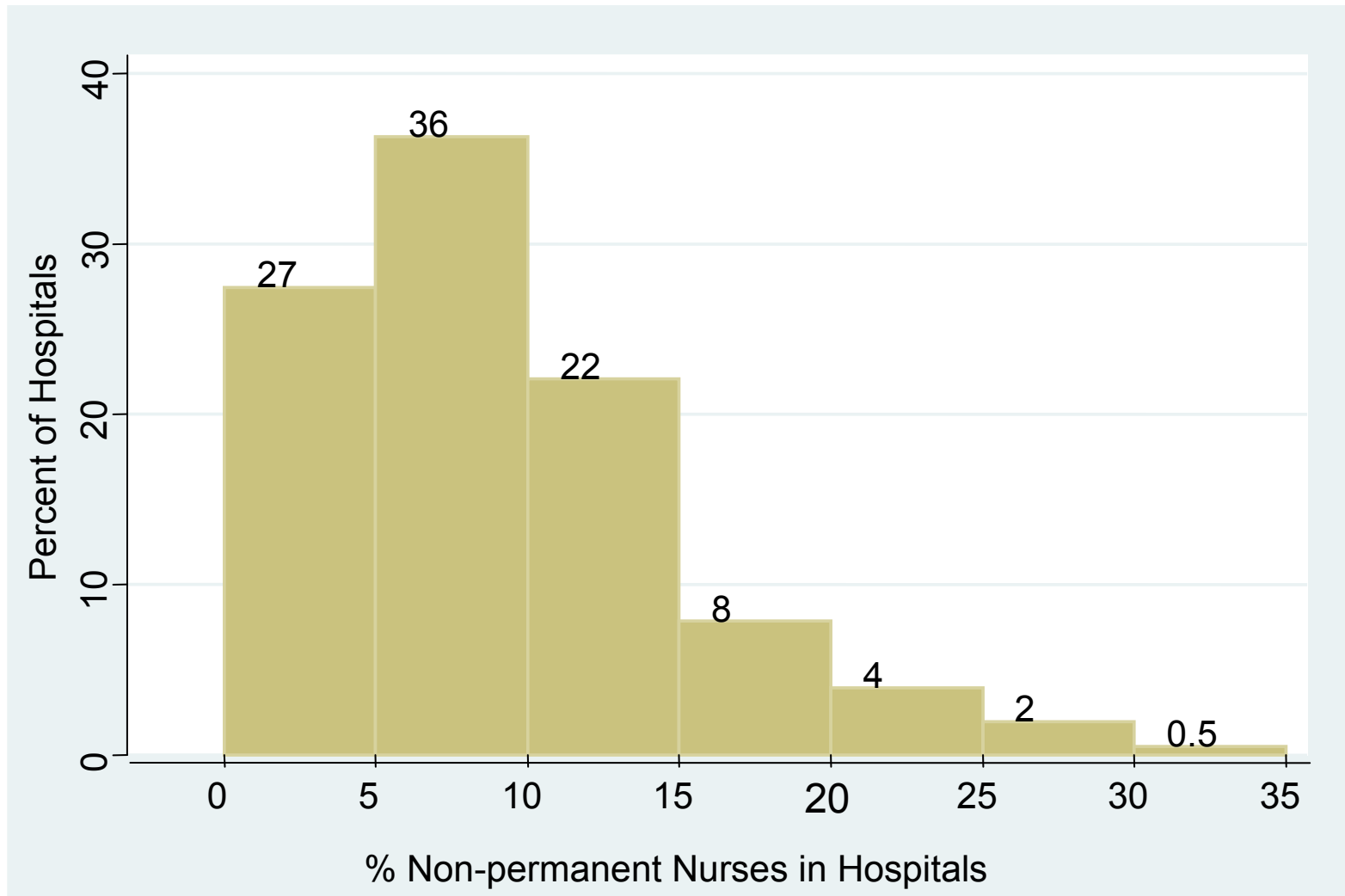
Supplemental Nurses Are Just as Qualified As Permanent Staff

Data Source: NSSRN, 2000

- Supplemental nurses somewhat more likely to have BSN or higher education
- More likely to be younger and less than 10 years from education
- Somewhat more likely to be male (and of Asian background)
- More likely to practice in ICUs where demand for nurses is great



Proportion of Non-Permanent Nurses Varied Significantly By Hospital



Created 3 Categories of Hospitals by Proportion of Temporary Nurses

% Temporary RNs	% Hospitals
• 5% or under	31%
• 5% to 15%	55%
• Over 15%	14%

RN Outcomes by % Supplemental Nurses (Without Controls)

% Supplemental Nurses			
RN Outcomes	<5%	5%-15%	>15%
Dissatisfied with job	41.12	40.27	46.08
Plans to leave within 1 year	19.68	22.96	29.70
High burnout	44.42	42.23	47.95

Nurse Outcomes and Percent of Non-permanent Nurses in Hospitals (1)

(without controls for work environment)

- Staff nurses in hospitals with highest % of non-permanent nurses
 - Were significantly more likely to score in the high burnout range
 - Were less likely to be satisfied with their jobs
 - Were more likely to intend to leave their jobs within a year

Nurse Outcomes and Percent of Non-permanent Nurses in Hospitals (2)

(without controls for work environment)

- Nurse burnout is significantly lower in hospitals in the middle category (5-15%) than in the low category (less than 5%)
- Job dissatisfaction is higher in the lowest compared to the middle but the difference is not statistically significant
- Summary: nurse outcomes are poorest in hospitals in which more than 15% of their nurses are temporary, but there seems to be a benefit of having some supplemental nurses, particularly on burnout

There is an association between poor nurse outcomes and use of more supplemental nurses.

Are the supplemental nurses contributing to these poorer outcomes among permanent nurses?



Measuring Quality of Care Environment

- **Nursing Work Index, a nurse survey-based instrument, selected by National Quality Forum in 2004 for National Voluntary Consensus Standards for Nursing Care Performance**
 - Staffing adequacy
 - Nursing foundations for quality
 - Nurse manager ability and leadership
 - Nurse-physician relations
 - Nurse involvement in hospital affairs

Aiken and Patrician, *Nursing Research*, 2000;
Lake, *Research in Nursing & Health*, 2002

Percentage of Non-permanent Nurses in Hospitals with Different Care Environments

Work Environment	Mean	Range
Poor	11%	0.6% - 33%
Mixed	9%	0% - 27%
Good	8%	0% - 18%

The Care Environment Accounts for the Difference

- Once we take into account the effects of the care environment (particularly resource adequacy) on nurse outcomes, nurses in hospitals employing more temporary nurses are no more likely to be dissatisfied with their jobs.
- In the case of burnout, nurses in hospitals that employ more temporary nurses are significantly less likely to have high burnout.
- Conclusion: It's the poor care environment that is responsible for poor nurse outcomes and supplemental staffing seems to help protect nurses against burnout.



Adverse Events and Percentage of Non-permanent Nurses in Hospitals

- Frequency of adverse events
 - Wrong medications
 - Nosocomial infections
 - Patient falls
 - Patient or family complaints
 - Work-related injuries
 - Verbal abuse of nurses



Adverse Patient Events & Percentage of Non-permanent Nurses in Hospitals

- Only two of the six adverse events, nosocomial infections and patient falls, were higher in hospitals that used more supplemental nurses
- When we take into account differences in the quality of the care environment, the negative findings disappear
- Indeed, nurses in hospitals with more supplemental nurses were significantly less likely to report high frequencies of wrong medications, complaints, and verbal abuse

Conclusions

- Supplemental nurses are as or slightly more qualified than permanent nurses
- Permanent and temporary nurses are not distinctly different groups; more than half of supplemental nurses have primary jobs as staff nurses
- Negative outcomes for nurses and patients associated with substantial use of supplemental staff are explained largely by deficits in care environment, particularly inadequate staffing
- Supplemental staffing compensates for nurse staffing deficiencies and thus improves nurse and patient outcomes in poorly staffed hospitals
- The greatest improvement for nurses and patients can be achieved by improving the care environment, particularly by increasing permanent nurse staffing

Evidence-based practice requires that we challenge the myths that pervade health care and act on the basis of evidence not opinion.

The evidence suggests that supplemental nurse staffing employed thoughtfully and strategically is a valuable resource for nurse retention and patient quality improvement.

The Webcast was presented by
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