Nursing’s Impact on Quality Outcomes

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Value-Based Purchasing: Opportunity to Establish Business Case for Nursing

- Medicare (CMS) payment policies provide financial incentives and penalties for hospital performance on specified measures
- Incentives: Patient Satisfaction accounts for substantial share of performance score
- Penalties: Readmissions and preventable adverse outcomes (infections, falls with injuries, poor glycemic control)
- Research demonstrates that nursing is linked to performance measures used for payment
- $1 billion at stake for hospitals depending upon their performance scores

The Quality Health Outcomes Model

Care Environment
Interventions
Outcomes
Client


30-Day Adult General Surgical Mortality Rate, By Hospital, US

Mean death rate: 1.65% - Range: 0.00% - 12.50%

Patient/Nurse Workloads, By Hospital

Mean: 5.3 patients per nurse - Range: 3 - 12

Patient to Nurse Ratio

Each 1 patient increase in nurses’ workloads is associated with 7% increase in mortality

Aiken et al., Medical Care 2011

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% Hospital Staff Nurses Rating Environment Poor/Fair, By Hospital

Mean: 41% - Range: 0% - 92%

Effect of Improved Nurse Staffing on Mortality Depends Upon Quality of Work Environment

Effect of Improved Nurse Staffing on Mortality

BSN Nurses as Percent of Hospital Staff Nurses, By Hospital

Mean: 38% - Range: 0% - 80%

More BSNs = Better Patient Outcomes
Aiken et al, Lancet 2014
- Each 10% increase in proportion of BSNs at bedside is associated with 7% decline in mortality after general surgery

Business Case for Achieving IOM Recommendation of 80% BSNs
Yakusheva, Medical Care 2014
- Looks at dose of BSN care for individual patients
- Finds even larger impact of BSN proportion on reducing mortality: each 10% increase in BSN care reduces mortality by 11 percent
- Finds at 80% BSN dose that readmissions and length of stay are also significantly reduced
- Even for a hospital paying salary premium for BSNs, the cost of transitioning to 80% BSN staffing is more than offset by savings produced by better patient outcomes

Outcomes of In-hospital Resuscitation
McHugh Aiken under review
- Nurse staffing: Each additional patient added to med-surg nurses’ workloads is associated with 4% lower survival to discharge
- Work environment: Patients experiencing in-hospital resuscitation cared for in hospitals with poor work environments have 22% lower survival than patients in hospitals with good work environments (independent of RN staffing)
Mortality for Ventilated ICU Patients
Kelly, Aiken Critical Care Med 2014
- Ventilated ICU patients in hospitals with good work environments have 11% lower 30-day risk-adjusted mortality (controlling for other factors)
- Each 10% increase in % BSNs is associated with 2% lower mortality
- Not enough variation in ICU nurse staffing to study (standard is 2:1)

Building Business Case for Investments in Nursing
- Achieving better performance scores to qualify for incentives (patient satisfaction)
- Avoiding penalties for poor performance (excess readmissions and infections)
- Nursing innovations to improve revenues or reduce expenditures per patient (Magnet)

Nursing Resources Explain Patient Satisfaction
Kutney Lee, Aiken Health Affairs, 2009
Jha et al., NEJM 2008
Aiken et al. BMJ 2012
- HCAHPS patient experience scores figure prominently in Medicare performance incentives
- Only 60% of patients give their hospitals the highest rating (9 or 10 on 10 point scale)
- Nurse to patient staffing ratios and quality of work environment are the most important factors influencing global measures of patient satisfaction:
  - Overall rating of hospital
  - Recommend hospital

Readmissions, Penalties, and Nurse Staffing
McHugh, Health Affairs, Oct 2013
- 2225 hospitals were penalized $280 million in 2012 for excessive readmissions; penalty rates increasing
- Hospitals with better nurse staffing had 25% lower odds of being penalized at all and 41% lower odds of receiving the maximum penalty for excess readmissions

Nurse Staffing, Work Environment, and Readmissions
McHugh et al., Medical Care 2013
Ma, McHugh, Aiken, Medical Care 2015
Tubbs Cooley, Aiken et al, 2013 BMJ Quality and Safety
- Strengthening inpatient nursing resources is a cost effective strategy for reducing excess hospital admissions
- Each 1 patient increase in patient to nurse workloads increases readmissions by
  - Between 6-9% for heart failure, pneumonia, AMI and 3% for general surgery/joint replacements
  - 11% for children
- Better work environments vs poor reduces readmissions by between 6-10% for HF, PN, AMI and 3% for general surgery

Nurses Prevent Infections
- 724 hospitals penalized $330 million in 2015 for preventable adverse events including infections (HAIs)
- Hospitals with better nurse staffing and low nurse burnout had 30% fewer hospital acquired infections accounting for annual savings of $68 million in Pennsylvania alone Cimiotti, Aiken et al, Am J Infection Control 2012
- Critical care nurses in hospitals with good environments 36-41% less likely to report frequent HAIs Kelly, Aiken et al. Am J Crit Care, 2013
Nurses Prevent Adverse Outcomes that Contribute to Financial Penalties and Higher Costs

- Each additional hour of RN care per patient day reduces inpatient cases of poor glycemic control — a “never event” — by 16% McHugh, Aiken Int J Qual in Healthcare, 2011
  - Deaths for patients with poor glycemic control were 16% vs 9% for matched patients
  - Costs for inpatients with poor glycemic control average $26,000 vs $18,000 for matched patients
  - A savings of $8,000 per patient by preventing poor glycemic control

Kaiser Quality and Nursing
McHugh, Aiken, Burns Health Care Manage Review 2016

- Kaiser integrated care is highly regarded for high quality and efficiency
- Efforts to obtain Kaiser quality by replicating Kaiser structure have failed
- Higher investments in nursing and nurse-led culture largely account for better outcomes in Kaiser hospitals
- Kaiser’s Special Sauce—NURSING

Nursing Innovation: Business Case for Magnet
Jayawardhana, Welton, Medical Care, 2014

- Costs of becoming Magnet are more than offset by increased inpatient revenues after attaining Magnet
- Increased revenues are due to higher quality
- Payback from becoming Magnet occurs between 2nd and 3rd years
- Thereafter, Magnets receive higher revenues per discharge than comparable non-Magnets

Business Case: It costs more to have inadequate nurse staffing and poor work environments
Dall et al., 2009, Medical Care

- Adverse occurrences among hospital patients were associated with
  - 251,000 deaths
  - 22.6 million additional hospital days
  - More ICU days
  - $41.8 billion nationally in medical care costs
- Improved nurse staffing reduces adverse occurrences, penalties, and costly nurse turnover that together more than offset investments in improved staffing

Affordable Care Act

- Game changer
- New stakeholder advocates for nurses
- New options for nurses to lead care innovations
- Value-based purchasing strengthens business case for nursing
- Research is contributing!

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