Improving Clinical Outcomes: A Study of the Impact of Audit and Feedback on Nurse Performance

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Learning Objectives

• Discuss the importance of provider behaviors on achieving clinical outcomes
• Discuss audit and feedback (A & F) as an intervention to modify provider behaviors
• Examine the impact of A & F on the pneumococcal immunization rate in an ambulatory setting
• Explore other situations where A & F might be implemented as a useful intervention
Purpose

Explore the impact of timely, individualized audit and feedback (A & F) on nursing behaviors to improve the pneumococcal immunization rate for at-risk adults in ambulatory settings.
Centers for Disease Control & Prevention estimates only:

• 20% of the at-risk population ages 19 to 64 has been immunized

• 61% of those greater than age 65
Background (continued)

Merck Sharp & Dohme Corp-funded quality improvement study (11/2013 to 10/2014)

– Implemented streamlined workflow, education, and group audit and feedback
– Achieved improvement from 27% to 42% pneumococcal immunization of eligible patients

Nurse leaders wanted to explore strategies to immunize 50% of eligible patients
Background (continued)

• Review of data regarding nurse performance revealed variations in immunization rates
  – Annual rates varied from 10% to 80%

• Interventions targeted toward provider behavior can have major impact on implementation of practice guidelines

• A & F has been shown to impact behavior
Audit & Feedback (A & F)

• Assumption
  – providers motivated to meet clinical targets and modify practice if they know clinical performance does not meet targeted expectations

• Research supports that A & F strategies can achieve important gains, especially if the initial performance is low
Audit & Feedback (continued)

• Components
  – Performance measured for period of time, compared to standard, results shared with individual, more than once
  – Timely, actionable, non-punitive

• Provides more accurate information regarding personal performance than can be determined from self-assessment
Current study

• **Goal:** Increase immunization rates to 50% for eligible patients in a pre-surgical testing center

• **Time:** October 2014 through August 2015

• **Funding:** Merck Sharp & Dohme Corp.
Human Subjects Protection

Institutional Review Board determined quality improvement study

Consent not required
Sample

• Setting
  – Pre-surgical testing center in Virginia with over 12,000 visits annually
  – Screening for patients eligible for Pneumovax 23
    • Patients 18 to 65, with history of chronic disease, and/or smoker or asthma
    • Patients 65 or older

• Nursing Staff
  – 27 RNs who conduct risk assessment of patients prior to surgery
Implementation

Phase 1 (November 2014 to January 2015)
• Feedback from previous year’s performance
• General departmental feedback

Phase 2 (February through August 2015)
• Individualized Audit & Feedback
• Data generated from electronic medical record
• Individual rate of successful immunizations provided in email from manager
Results and Analysis

Phase 1
- 2,647 screened; 614 eligible; 185 immunized
- Departmental immunization rate
  - Mean = 31%, Range 27% - 32%

Phase 2
- 6,415 screened; 1,379 eligible; 789 immunized
- Departmental immunization rate
  - Mean = 54%, Range 45% - 67%

Chi Square:
\[ X^2 = (1, N=1993) = 46.406, \ p=0.00 \]
Control Chart

Pre-Surgical Testing Pneumococcal Vaccination Rate Control Chart

Vaccination Rate (Total Vaccinated/Total Eligible)

Phase 1

Phase 2

Time Period (each data point represents one month)

Vacc Rate  Average  Intervention
Discussion

• Findings support that timely, individualized, non-punitive A&F results in improved pneumococcal immunization rates.

• Generalized feedback that is not actionable did not have the same impact.

• Nurses considered monthly email feedback about current performance more useful than a 12-month summary.
Challenges

• Changes in CDC Pneumococcal Guidelines
  – Subsequent effect on the EMR and processes

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
September 19, 2014

13-Valent Pneumococcal Conjugate Vaccine
23-Valent Pneumococcal Polysaccharide Vaccine

Prevnar 13® = PCV13
PNEUMOVAX23® = PPSV23

“Both PCV13 and PPSV23 should be routinely administered in series to all adults aged ≥65 years.”
Limitations

• Limited generalizability
  – Small sample size
  – Short time frame

• Staffing turnover and leadership changes

• Not possible to generalize to behaviors other than adult pneumococcal immunizations
Conclusion

• Vaccine hesitancy is an international concern
• Individual variations in practice contribute to variations in clinical outcomes
• Provider compliance with guidelines can be influenced
• Actionable information about behavior is essential
• More study is warranted