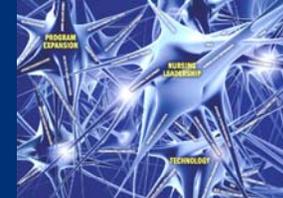




Bridging the Stroke Program Synapses: Electronic Medical Record Innovations

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Introduction

The innovative use of technology has facilitated achievement of high quality care by providing evidence-based assessment tools embedded in the electronic medical record (EMR). The successful application of a Dysphagia Screening Assessment and Interdisciplinary Education Records (IER) as best practice strategies in a Stroke Program have contributed to quality outcomes for patients and increased work satisfaction for nurses in the acute setting. Secondary stroke prevention through focused post-discharge follow-up utilizing an electronic documentation system has connected inpatient care with outpatient care and has established best practices and accountability into clinic nursing assessment for every stroke patient. The electronic process assures ease in data retrieval as well as accuracy and reliability of data that are essential for quality performance reporting. This successful integration of technology with nursing practice has contributed to significant reduction in aspiration pneumonia, higher staff satisfaction scores, optimal standards of care with improved outcomes, and reduced cost of care.

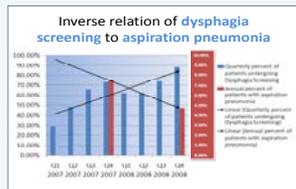
Financial Impact of Pneumonia			
Time Frame	Difference in Number of Cases with Pneumonia	Average LOS Variance For Complications	Average Cost/Case Variance
2007 to 2008	38	11 days	\$33,155
Estimated Cost Avoidance = \$1.3 million			

Methods

- Literature review to determine best practice evidence and strategies for implementation
- Multidisciplinary team approach
- Electronic tools design and development: dysphagia screen, interdisciplinary education record, and stroke prevention/risk factor modification form
- Medical staff education of new process and tools
- Creation of electronic reports for tracking compliance and quality outcomes
- Nursing leadership commitment to project and individual discussions with each non-compliant case
- Nursing incentives for compliance

Results

Following the introduction of the Dysphagia Screening Assessment tool into the daily nursing practice of an in-patient stroke unit, the incidence of aspiration pneumonia dropped from 7.5% in 2007 to 4.7% in 2008. As a result of implementing the Interdisciplinary Education Record in the electronic medical record, documentation of stroke education improved from 54% in 2007 to 92% in 2008. Nursing satisfaction scores on all neuroscience units not only increased but also exceeded institutional and national averages.

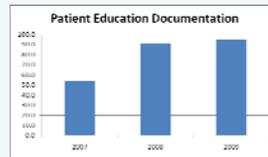


The initial data from the secondary prevention/risk factor modification electronic form provided information never quantified before by the institution and identified the percentage of stroke patients who received follow-up appointments at 30 days, 90 days, and 1 year. As a measure of the impact of discharge teaching and counseling tracked through the use of this form, 33% of smokers were still not smoking at the 30 day follow-up mark. Early data analysis using this system defined the out-patient education needs at the 30 day follow-up mark. It was found that a healthy weight was the greatest challenge (71% non-compliance), followed by an appropriate LDL goal (43 % non-compliance), and blood pressure control (21% non-compliance).

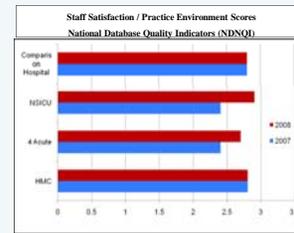
Quality Measures	Qtr 3 2009	Qtr 4 2009
Percent receiving antithrombotic therapy or prescribed it at the 30 day visit	96.9	94.5
Percent with atrial fibrillation/flutter receiving anticoagulation therapy or prescribed it at the 30 day visit	95.2	95.7
Percent with LDL > 100, or LDL not measured receiving cholesterol reducing drugs or prescribed it at the 30 day visit.	90.9	91.7
Percent prescribed one or more antihypertensives at the 30 day visit.	92.9	97.5
Percent with Diabetes Mellitus on diabetic medication at the 30 day visit.	96	83.3
Percent with history of smoking cigarettes at time of hospitalization that have not smoked by the 30 day visit.	36.4	33.3

Discussion

The impact of this program on patient care in reducing post-stroke complications has been significant. Prior to its implementation analysis of data showed that stroke patients who experienced aspiration pneumonia were hospitalized longer (mean = 10 days) and that their care was more expensive – averaging \$11,000 more per patient. The time delays that arise in obtaining speech therapy consults for dysphagia screening frequently contribute to the untoward outcome of aspiration pneumonia in stroke patients. Reducing or eliminating this negative outcome is part of evidence-based care. An interdisciplinary group involving nursing staff, nursing informatics, speech therapy, and the stroke team reviewed recent literature and best practices in the management of stroke patients and created the Dysphagia EMR screening tool. On admission, the assessment is prompted by the patient's diagnosis in the EMR, thereby putting into practice an evidence-based standard. If a patient fails the dysphagia assessment, an automatic electronic referral to speech therapy is generated. The refinement of the electronic links for dysphagia assessment and referral eliminates redundancy and standardizes the Nursing Process for patient care. The IER documentation is activated by the medical diagnosis and prompts nurses to initiate patient and family education early in the admission.



The IER produces an ongoing record of education, making it possible to review education that has been initiated as well as patient and family responses and areas that need further strengthening and reinforcing. The multidisciplinary nature of the IER assures that all patient education documentation is done in one location. The importance of secondary stroke prevention through focused post-discharge follow-up has become a vital component in connecting inpatient care with outpatient follow-up. This assessment and monitoring tool is used at a patient's 30-day, 90-day, and 1-year follow-up visits. By incorporating evidence-based guidelines from the American Stroke Association and National Stroke Association, this tool standardizes the follow-up assessments and helps construct quality outcome indicator reports for risk factors, medication and lifestyle compliance, and education. This systematic and consistent documentation during actual patient encounters enables data retrieval to determine effectiveness of treatments in patient care and quality of life.



Conclusions

This successful integration of technology with nursing practice is the result of critical thinking that incorporated evidence-based practices into comprehensive care for stroke patients. The process created valid and reliable measurements that link nurses' unique contributions to quality patient care and outcomes.

References

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