Solution Title

Improving Immunization Assessment and Core Measure Compliance Through the Use of Technology

Focus Area: Information Technology

Program/Project Description, Including Goals

Core measure compliance is a focus for many organizations. During calendar year 2012, Sinai Hospital of Baltimore did not achieve an acceptable level of compliance for assessing a patient’s pneumococcal immunization status. The Directors of Patient Care Services and Nurse Managers focused their attention on immunization assessment; however an acceptable outcome was still not achieved. Pneumococcal immunization overall rate was used as the outcome measure for this project. Baseline data from September through December 2012, showed that Sinai’s pneumococcal immunization overall rate was below the goal of 92% (Figure 1).

Figure 1

As a result of the pneumococcal overall rate being below the expectation, the organization began an initiative to improve compliance, with the goal to: 1) Design an electronic immunization form that leverages the electronic health record functionality, 2) assist the nurse in obtaining and documenting an accurate immunization assessment, and 3) promote immunization of the patient.
**Process**

The Nursing Informatics Specialist (NIS) was charged with leading the initiative. To begin, NIS convened a multidisciplinary group to review the current form and identify potential improvements. The team consisted of direct care nurses, clinical leaders, nurse managers, clinical nurse specialists, performance improvement coordinators, information services, and a nursing outcome leader. The team reviewed the current electronic form and identified the following issues:

- The current form was cumbersome
  - It did not have a logical flow
  - Staff were confused regarding the completion of fields
  - It did not leverage the electronic health record functionality to make it easy for the nurse to do the right thing and hard to do the wrong thing
  - The selections in the Discrete Task Assays (DTA or fields) were not clear to the end user

**Solution**

The solution that was developed to solve the problem of pneumococcal immunization assessment compliance consisted of short term, and long term re-design solutions of the electronic tool within the electronic health record.

The short term solutions identified by the team consisted of changes to the DTAs within the current form. These changes included removing some of the options within the fields that did not add value, adding some selections that were clearer, and re-organizing the selections into a more logical flow. These short term solutions were able to be built by information systems, tested, and implement within a short period of time.

The long term solution was more challenging and required an additional four months to design, build, test, and implement. The long term solution consisted of optimizing conditional logic functionality to re-design the form. The conditional logic used an algorithmic approach to prompt the nurse to complete certain fields in a certain order.

Once the solutions were built in the form, end users were identified to evaluate the changes. The goal was to assure that the changes that were made were feasible within the workflow of the nurse and that they made practical sense. After gaining buy-in by the end users, an education presentation was developed which highlighted the algorithmic approach and streamlined process. The presentation was shared with the nursing staff prior to implementing the changes to the form.
**Measureable Outcomes**

The short term solutions were implemented in March of 2013 and the long term solution was implemented in July of 2013. Since implementing these innovative strategies to the electronic form pneumococcal immunization overall rate has been consistently above 95% (Figure 2).

**Figure 2**

![Pneumococcal Immunization Overall Rate](image)

**Sustainability**

To assure that the results continue to exceed the expectation, the organization performs daily audits regarding immunization assessment. If charts are identified that do not meet the expectation, the nurse manager of the unit follows up with the staff and the documentation is corrected. Also, the daily audit results and the pneumococcal immunization overall rate is shared with the staff so that they can see that their practice is achieving optimal outcomes for patients.

**Role of Collaboration and Leadership**

Collaboration and leadership were crucial for the success of this project. As stated earlier, the team consisted of the nurse informatics specialist, direct care nurses, clinical leaders, nurse managers, clinical nurse specialists, performance improvement coordinators, information services, and a nursing outcome leader. A global perspective was used to assure that all stakeholders were at the table to assist in the identification of the issues and the re-design of the electronic form. The nursing leadership team (directors of patient care services, clinical nurse
specialists, nursing informatics specialist, and chief nursing officer) were all very engaged in this project. Their engagement was demonstrated through providing time for staff to participate in the re-design and leading the project.

**Innovation**

This solution is innovative because it uses technology that functions within the workflow of the nurse to assist in achieving optimal patient outcomes. The unique attribute of this solution is the conditional logic that was used to design an algorithmic form that prompts the nurse to complete certain fields in a certain order.