

Using Clinical Decision Support in an EHR to Facilitate a Nurse-Driven Protocol

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Introduction/Background

It is well known that the use of indwelling urinary catheters (IUC) during an acute hospitalization increases the risk of catheter-associated urinary tract infection (CAUTI). Reducing the length of catheterization (catheter-days) can reduce CAUTI risk.^{1,2} Prior to the implementation of an integrated electronic health record (EHR) at this Academic Medical Center (AMC), a Nurse Driven Protocol (NDP) for IUC removal had been implemented utilizing a hybrid approach with electronic decision support for the ordering of the protocol and a paper flow sheet for documentation. This protocol effectively reduced catheter days by 11% at this AMC in early 2015. Implementation of a new EHR created new workflows for ordering and documentation and some software “bugs” that led to a decrease in the ordering and documentation of IUCs and the use of the NDP. The work described here was initiated to recoup or surpass previously obtained outcomes.

Methods:

To address the issues resulting from the implementation of our EHR, interprofessional collaboration was employed to identify specific problems and possible electronic solutions. Issues that were addressed included redundant order sets, suppressed CDS Best Practice Alerts (BPAs), nursing work list prompts and related flow sheet documentation. Upon completion and before activation of software modifications, reference sheets and education were provided.

Results

Order sets were simplified and standardized across phases of care. They were modified to provide clarifying language related to IUC care orders in the Emergency Department order sets and required entry of a specific date and time for the removal of IUC in post-op order sets. The CDS BPA was modified to trigger the morning after an IUC order is placed. This BPA requires the ordering provider to choose either to discontinue the catheter ‘now’ or to order the NDP for removal of IUC. Improvements to the Flowsheet and Work List include:

- When NDP is ordered, a ‘reason for continuation’ row automatically populates the Flowsheet.
- A Work List task prompts the nurse (every 8 hours) to utilize the NDP for assessment of NDP exclusion criteria
 - Presence of exclusion criteria requires ongoing use of the IUC
 - Absence of exclusion criteria initiates the NDP and removal of the IUC
- Documentation of this assessment from the Flowsheet or the Work List now satisfies the NDP requirements
- A link to the NDP for IUC Removal Policy and algorithm (utilized for decision support and next steps after catheter removal) was built into the EHR.

The EHR and workflow modifications led to a sustained 14% decrease in catheter-days, surpassing previous performance of the NDP.

Discussion/Conclusion

The implications of a new electronic health system can greatly impact work flow and potentially jeopardize existing quality improvement projects. The goal of these EHR modifications was to facilitate care providers in the ordering, assessment and documentation for appropriate urinary catheter usage and utilizing a NDP for Urinary Catheter Removal. These improvements were accomplished through interprofessional collaboration and a shared vision to achieve or surpass previous performance.

References:

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