

Testing a Clinical Documentation System for Nursing Data Capture Using De-identified Patient Charts

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Abstract: Between the build and testing phases of a multidisciplinary clinical documentation system, de-identified patient charts were used as a framework to walk through the nursing work day. This exercise revealed gaps in data capture, usability concerns, and training issues for the team to address prior to formal system testing.

Introduction: Ensuring data quality in an electronic clinical documentation system requires the ability for comprehensive, accurate data capture. This project was conducted toward the end of the build phase but prior to formal system testing of a multidisciplinary clinical documentation system that is being built by and for Brigham and Women's Hospital and Massachusetts General Hospital. The nursing documentation portion of this system was developed with extensive input from clinicians and with iterative usability testing of individual documentation sections. The purpose of this project was to identify data elements not be captured in the system as built so that modifications could be made. Usability and training issues that were identified during the process were also documented for the build team.

Method: Five de-identified patient charts, representing future pilot testing units, were used as a framework to recreate the nursing workday on a variety of patient care units. Patient data was entered into the clinical documentation system, beginning with the initial nursing assessment, and systematically progressing with daily nursing documentation. The tester, an experienced clinician and informatics student, kept a running narrative of problems encountered during the process of documenting nursing data. After analyzing each chart, the narrative was reviewed, and problems were entered into a spreadsheet. This gave the build team specific feedback regarding gaps in data capture, system usability, and potential system training issues.

Results: Sixty-two data content items were identified that could not be captured correctly in the new electronic system. Examples include: state of anxiety, estimated blood loss from surgery, mucous membrane assessment, fact that a tube is placed to gravity, patient position change (especially in relation to vital sign or respiratory changes), and ventilator abbreviations that match current abbreviations used. Forty-two usability issues and twenty-two training issues were also noted. Results were communicated to appropriate build team members for further consideration and potential system modification.

Conclusion and Lessons Learned: Although a limited number of charts were reviewed, this method proved effective to identify important issues to address prior to finalizing the build phase and moving on to unit and integrated testing of the documentation system.