

# CLINICAL EVIDENCE

## New Product Decisions - The Process and Outcome for a Community Health System

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### Abstract

**Purpose:** To compare patient outcomes and evaluate safety features and costs associated with a new catheter system and securement dressing.

**Background:** The need to improve dwell times for short peripheral catheters and reduce complication rates, along with improvements in clinical practice in radiology and enhanced staff safety were driving factors leading to a change in peripheral catheters and securement systems.

**Review of Relevant Literature:** Several reports of catheter stabilization devices have shown improved clinical outcomes with their use. Currently available studies on this new catheter system include one small evaluation and a randomized trial comparing a traditional round hub catheter coupled with a supplemental securement device and the new catheter system with an integrated stabilization platform combined with a securement dressing. Passive safety mechanisms on peripheral catheters may produce fewer needlestick injuries than mechanisms requiring the user to activate the device.

**Methods:** After a learning period, the following seven months were designated the intervention period. Outcome data from the same seven-month period of the preceding year were used for comparison. The data were divided into scheduled and unscheduled restarts. Data from two hospitals are reported separately and in combination. Data from the two periods were analyzed for equivalence or noninferiority.

**Results:** Clinical outcomes for both periods are virtually equivalent, demonstrating that one system is not inferior to the other regarding catheter complications. However the catheter system with the integrated stabilization platform was less costly and safer due to a passive safety mechanism. Problems with high pressure injection in the radiology department were also solved with the new catheter system.

**Conclusions:** While any product change can be a challenging experience, we accomplished these changes in an orderly manner without negative impact on patient outcomes and reducing costs. Improvements in radiology were also attributed to these changes, along with enhanced staff safety.

**Implications for Practice:** The catheter designed with an integrated stabilization platform, apre-attached extension set, and a passive safety mechanism produced benefits for radiology staff without negatively affecting patient outcomes in other clinical areas. These product changes were implemented in an organized manner and involved all stakeholders in the process.