Reducing Peripheral Intravenous Infiltrations in the Perioperative Arena: A Patient Safety Initiative 
Focusing on Assessment and Treatment

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BACKGROUND

- Infiltrations are the most commonly identified complication of peripheral intravenous (PIV) therapy, and the more severe infiltrations can lead to functional impairment and residual cosmetic defects.
- Often, the extent of injury may depend on how quickly a potential infiltration is assessed and treated.
- Thus, it is important to assess PIV sites frequently (e.g., hourly) in an effort to reduce the severity and potential harm to the patient.
- The perioperative setting may create unique challenges for assessment like patient positioning, draping, and darkness during the procedure.

GOALS

- The overall goal of this patient safety initiative was to reduce the number of PIV infiltrations and potential harm to patients. The smart goal was to reduce the severity (i.e., Grade ≥2) of PIV infiltrations by 50% by December 2013 in the perioperative area.
- Performance improvement goals are: 1) reduce the severity of PIV infiltrations in the perioperative period; 2) achieve >95% compliance with hourly PIV site assessments; and 3) develop a treatment algorithm for PIV infiltrations.

INTERVENTIONS/TESTS OF CHANGE

- Educated perioperative staff on PIV infiltrations, our tests-of-change, and solicited their valuable participation in the assessment of PIV sites
- Implemented a new electronic safety reporting system
- Encouraged staff to discuss PIV placement, and any concerns regarding the ability to assess hourly, during the Time-Out
- Changed anesthesia record to include an “Hourly Site Assessment”

OUTCOMES

- As the run chart shows, the trend since January 2011 indicates the beginning of a reduction in the severity (i.e., Grade ≥2) of PIV infiltrations.

DISCUSSION

- From January 2011 until we began our tests-of-change (February 2012), there were 16 PIV infiltrations with a Grade ≥2. Since this time there has been 10. Thus, to date our efforts seem to be moving toward our goal of reducing the more severe PIV infiltrations, although we still have a ways to go with this ongoing safety/quality initiative.
- The keys to success include: educating and engaging the perioperative staff; soliciting the expertise and empowering the OR nursing staff to “speak up” regarding hourly assessments of PIVs; changing the anesthesia record and implementing the hourly PIV site assessment requirement, and finally auditing and providing ongoing feedback and dialogue to the anesthesia and surgical services staffs.
- Our goal of improving patient safety is to reduce the number and severity of PIV infiltrations in the perioperative arena and throughout the hospital itself. This will occur by continued efforts at hourly site assessments, and standardization of the infiltration treatment process.

OUTCOMES

- Draft of PIV infiltration treatment algorithm to be used hospital-wide

PIV infiltrations were reduced from 16 to 10 during this period.