What's New in the Patient Safety World

December 2014

Surprise Central Lines

One of our earliest Patient Safety Tips of the Week was our May 8, 2007 column "Doctor, when do I get this red rubber hose removed?". In that column we related how embarrassed we were as a young physician when a patient asked that question as we were providing discharge instructions to her. That led us to one of our first patient safety projects in the early 1990's to reduce the unnecessary use of urinary catheters. Of course, the most important intervention to avoid CAUTI's is to avoid such catheters in the first place and limit duration of catheters in those patients who do have a legitimate initial indication for one. We were amazed at how often the Foley catheter appears unbeknownst to the primary physician responsible for the patient's care and how often they are placed without legitimate medical indication.

The same obviously applies to indwelling catheters in any area of the body. The great work done by Peter Pronovost and colleagues on prevention of CLABSI's emphasized careful attention not just to insertion and maintenance of central lines but also to the issue of indications or continued indications for the central lines.

Now a new study assessed how often clinicians are unaware of central venous catheters, both traditional triple-lumen catheters and PICC (peripherally inserted central catheter) lines, at 3 academic medical centers (Chopra 2014). In almost 1000 patients the prevalence of a triple-lumen central venous catheter or PICC line was 21.1% (60% if these were PICC's). Clinicians responsible for care of those patients were unaware of the presence of these catheters in 21.2% of cases. Such unawareness was more common for PICC lines and more common in non-ICU settings. Teaching attendings and hospitalists were more often unaware than were housestaff or physician extenders.

Our January 21, 2014 Patient Safety Tip of the Week "The PICC Myth" focused on the widespread use of PICC lines and the general lack of awareness by clinicians of their potential complications. Previous work by Chopra and colleagues as well as others has shown potential complications of PICC lines are at least as frequent as and probably more frequent than those from more traditional central lines. Complications include CLABSI's, deep vein thrombosis, catheter tip malpositioning, thrombophlebitis, and catheter dysfunction. Both patient-related and device-related factors are important in leading to complications of central lines and PICC lines. But it is clear that the duration of catheter use is an important factor in leading to complications and that many times the catheters are left in place longer than necessary.

One of the most important interventions in prevention of CLABSI's (or, for that matter, infection of any indwelling device) is asking on a daily basis whether the catheter is still necessary. With PICC's we often forget to do that, particularly when the patient is not in the ICU. In that January 21, 2014 Patient Safety Tip of the Week "The PICC Myth" we noted a study by Tejedor and colleagues (Tejedor 2012) looking at how often central venous catheters and PICC lines were retained when not needed ("idle days") on non-ICU wards. They found that significant proportions of ward central line days were unjustified. Patients with PICCs had more days in which the only justification for the CVC was intravenous administration of antimicrobial agents. They suggest that reducing "idle CVC-days" and facilitating the appropriate use of peripheral IV's may reduce central line days and CLABSI risk.

Also in that January 21, 2014 Patient Safety Tip of the Week "The PICC Myth" we stressed how our systems make it very easy for a patient to get a PICC line, often for reasons of staff convenience rather than for evidence-based indications. Sometimes they are ordered at night by a cross-covering physician. And since most PICC lines are inserted by specially trained nurses, most physicians are not involved in insertion of the PICC. So it's fairly easy to be unaware of a PICC line. We're not at all surprised by the findings of the current Chopra study.

The editorial accompanying the Chopra study (Taichman 2014) questions that, if we are not seeing catheters when we round on our patients daily, "what else are we missing?". Is it that we are doing perfunctory exams on such rounds or not even doing that? Are we missing things like early decubiti?

The bottom line is that we are all human and we tend to look for things we expect or things we are trying to avoid. If we are not expecting our patient to have a central line or PICC line we may easily overlook its presence when we are rounding. This might even be another example of "inattentional blindness".

Therefore, we need to include such oversight as another example of a **predictable error** and put systems in place to help us avoid the problem. One of the items on our checklist for daily rounds on patients in all locations should be "Does this patient have any catheters or lines in place and, if so, are they still necessary?" Use of such lines should be evidence-based where possible. Alert fatigue aside, we also recommend that flags be set in the electronic medical record (EMR) to highlight for the clinician that such catheters are in place and need to be reviewed for continuation on a daily basis.

See also our updates on central venous catheters and PICC lines:
October 2015 "Michigan Appropriateness Guide for Intravenous Catheters"

References:

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