Reminding health-care staff to remove catheters reduces infections by half

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Urinary catheters are often left in place longer than needed, and new research shows that reminder systems that encourage hospital staff to remove catheters promptly can reduce the rate of catheter-associated urinary tract infections by 52 percent.

The review and meta-analysis was published July 30 in the journal, *Clinical* Infectious Diseases. The catheter-associated urinary tract infection (CAUTI) is the most common hospital acquired infection and was the first complication chosen for non-payment by Medicare, beginning in late 2008. Other insurers have now followed suit.

Lead author Jennifer Meddings, M.D., and her U-M colleagues studied the effectiveness of reminder systems to decrease catheter use and reduce CAUTIs. They found that reminder systems that prompt hospital staff to assess and remove catheters on a routine basis reduced the rate of catheter-associated urinary tract infections by 52%.

"We are also excited about the potential for reminder systems to have a cascade of benefits to patients beyond prevention of CAUTI, because reducing catheter use can improve patient comfort, reduce bloodstream infections, reduce need for antibiotics, improve patient mobility and decrease length-of-stay," says Meddings, a clinical lecturer in U-M's Department of Internal Medicine.

Urinary catheters are commonly placed to drain bladders in hospitalized patients. Unfortunately, catheters are often left in place longer than

needed because doctors forget the catheter is still being used or do not routinely assess if it is still needed. Having a catheter increases the patient's risk for catheter-associated urinary tract infections, bloodstream infections, and other risks associated with decreased patient mobility when catheters are in place, such as life-threatening blood clots. But prior research by VA/U-M's Patient Safety Enhancement Program indicated that only 1 in 10 hospitals use reminders to prompt removal of urinary catheters.

In most hospitals, four steps are needed to remove a urinary catheter: 1. the physician recognizes it is there; 2. the physician recognizes it is unnecessary; 3. the physician writes an order for removal; and 4. A nurse removes the catheter according to the order. Catheter reminder systems function by bypassing several of these steps.

The reminders can take many forms, such as stickers placed on charts or on catheter bags that remind nurses or physicians to remove the catheter. Some hospitals, like U-M, have used computer-generated reminders that appear when someone logs into a patient's chart online. Stop orders also can be directed at physicians, in which a catheter is discontinued unless a physician directly renews it.

Meddings and her colleagues note that hospitals should consider "nurse-empowered" catheter stop orders, which empower nurses to remove urinary catheters based upon criteria, without requiring the nurse to request an order from physicians. The researchers also found no evidence that reminder systems would lead to catheters being removed too early, as catheters did not need to be replaced at higher rates.

"Because catheter reminders and stop orders are beneficial regardless of the technology used — from verbal bedside reminders to computer-generated stop orders — these interventions appear to be low-cost strategies that could be implemented in any health care system,"

according to Meddings and her co-authors: Mary A.M. Rogers, Ph.D., research assistant professor in U-M's Department of Internal Medicine; Michelle Macy, M.D., MSc of U-M's Departments of Emergency Medicine and Pediatrics; and Sanjay Saint, M.D., MPH, Associate Chief of Medicine at Ann Arbor VA Medical Center and Professor of Medicine, Department of Internal Medicine, Division of General Medicine.

In related work, Meddings, Saint and Larry McMahon, M.D., chief of U-M's Division of General Medicine, also recently studied the implementation of new Medicare policies to encourage hospitals to prevent CAUTI by no longer paying hospitals to treat hospital-acquired conditions such as CAUTI. In a study published in the June issue of Infection Control and Hospital Epidemiology, the U-M researchers studied the potential of the new policy to encourage CAUTI prevention by financially penalizing hospitals when patients develop these complications.

This work revealed that the Medicare policy's requirements for documentation of hospital-acquired CAUTI is a complicated 3-step process for a hospital to correctly document a hospital-acquired CAUTI in order to not get paid extra. If any of the details are incorrectly documented, the hospital will mistakenly be paid extra. The researchers found that although hospital-acquired CAUTI was a common condition, most cases were not correctly identified in payment requests to insurers because a specific code to identify a UTI as "catheter-associated" was very rarely used. Rare use of this catheter code was found similarly at the hospital, state and national level.

"The bottom line is we are hopeful that policies such as non-payment for hospital-acquired complications such as CAUTI may motivate hospitals to invest in preventive strategies such as catheter reminder systems," says Meddings. "Yet, the anticipated financial impact of non-payment for

hospital-acquired CAUTI may not be large due to complex implementation details that may require more evaluation and changes in documentation of patient care before these types of policies have the expected financial impact."

Provided by University of Michigan Health System

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