ICU
MANAGEMENT & PRACTICE

Real-Time Physician Electronic Alerts Reduce Unnecessary Blood Testing in Elderly Patients

An electronic message sent to physicians the moment they ordered a blood test for elderly patients reduced unnecessary use of the test that is often false-positive for the elderly, according to a paper published in the November edition of American Journal of Managed Care.

The D-dimer test, combined with a clinical risking algorithm, can help in the diagnosis of deep vein thrombosis (blood clots in veins, otherwise known as DVTs) and pulmonary embolism (blood clots in the lungs). The risk of developing a blood clot in the venous circulation increases with age, and yet the overall accuracy of the D-dimer test worsens as patients get older, and is only 35 percent for patients 65 years of age and over. This can result in numerous false-positives and additional, unnecessary testing.This study is among the first to look at the effectiveness of an electronic alert for a specific condition in a specific patient population. The randomised trial of 223,877 patient visits for patients 65 years of age and over, and 564,264 patient visits for patients under 65 years of age, was implemented in eight primary care clinics within the Kaiser Permanente healthcare system in Colorado, each with at least 3,000 patients aged 65 years or older.

Physicians received an alert in Kaiser Permanente's electronic health record, Kaiser Permanente HealthConnect®, when ordering a D-dimer test for patients aged 65 and up. The alert explained the inaccuracy of the test for this age group and suggested using a radiological test as appropriate. As a result, the rate of D-dimer tests for patients over 65 decreased significantly from 5.02 to 1.52 per 1,000 patient visits, a relative reduction of D-dimer orders of 69.7 percent This decrease was maintained throughout the study period and the result was similar when the control group later received the alert.The results indicate that computerised alerts containing alternative diagnostic or treatment strategies to direct clinicians toward more appropriate alternative diagnostic strategies can be more effective in practice than simply providing "negative guidance."

"Physicians sometimes find it hard to remember to follow evidence-based clinical practice guidelines. Many people have suggested that computer generated alerts within electronic medical records may serve as reminders to improve adherence to best practices," said study lead author Ted E. Palen, MD,,PhD, MPSH, a clinician researcher at Kaiser Permanente's Institute for Health Research. "However, too many alerts produce alert fatigue, where receiving too many alerts becomes frustrating, leading to ignoring or overriding the messages."Kaiser Permanente has a long history of leadership in health information technology, operating the world's largest private electronic health record, Kaiser Permanente HealthConnect®. Recognising that health information technology is critical to clinical performance improvement, including patient safety, KP HealthConnect enables all of the organisation's 14,000-plus physicians to electronically access the medical records of Kaiser Permanente's 8.6 million members nationwide. Through continued innovation and system optimisation, Kaiser Permanente continues to revolutionise medical care, saving lives and preventing expensive and unnecessary procedures, while saving patients' and doctors' time and money.

"As the healthcare industry moves to widely adopt EMR technology, it is critical that physicians and other caregivers are given specific and relevant data at the point of care to avoid alert fatigue," continued Palen. "This study shows that delivering a very targeted electronic message for a particular patient profile can result not only in better use of the test in question, it can alter a physician's ordering behavior and promote improved adherence to a clinical practice guideline. This finding is important when designing systems that will support better coordination of patient care."Other authors of the paper include David W. Price, MD and Susan M. Shetterly, MS, from Kaiser Permanente's Institute for Health Research in Colorado and Aaron J. Snyder, MD, from the Colorado Permanente Medical Group.

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