Red, Yellow, Green: Appropriate Use of Diagnostic Imaging

Minnesota

Millions of Americans undergo costly and often invasive diagnostic procedures each year. Sometimes these tests help them avoid even more invasive tests, but are they really what the doctor ordered? Some new work in Minnesota points to signs that too many unnecessary high-tech diagnostic imaging (HTDI) scans are being made, which is a large contributing factor in the meteoric rise in health care costs.

HTDI use has been increasing at 15 percent to 20 percent annually—twice the rate of prescription drugs and far greater than the 10 percent annual increase in overall health care spending.

From 2000 to 2006, Medicare spending on HTDI skyrocketed from $3.6 billion to $7.5 billion, a more rapid ascent than that of any other physician-billed Medicare service during the same period.

In response, many health plans in Minnesota enacted prior notification (PN) rules requiring providers to contact a health plan service before ordering an MRI, CT, PET, or nuclear cardiology test to see if it would be covered by insurance order.

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"While this practice reduced the number of HTDI test in Minnesota, whether it resulted in more appropriate use of HTDI remained unclear," said Cally Vinz, vice president, health care improvement and member relations, Institute for Clinical Systems Improvement (ICSI). "Further, the resulting delays in testing and possibly treatment burdened patients, who often had to return at a later date for a different test if the health plan service denied the initial order.

The Institute for Clinical Systems Improvement (ICSI) brought providers, radiologists, and health plans together to develop and conduct a pilot program to study an alternative so providers could order HTDI test while with their patients. Five medical groups, four insurance companies, and the Minnesota Department of Human Services took part in the program.

ICSI devised a model that would be available in providers' offices to offer clinical decision support, based on American College of Radiology appropriateness criteria, while the provider is discussing the test options with the patient and before the tests are ordered. The criteria also are embedded into an electronic medical record (EMR) or made available on a website and are continually enriched and expanded.

The decision-support software makes it simple to order the right scan. After the provider runs a patient's clinical indications through EMR or web-based appropriateness criteria, he or she receives immediate feedback on the usefulness of the tests being ordered. A "Green" rating indicates the test would be highly useful for that circumstance, "Yellow" indicates it would be moderately useful, and "Red" indicates the test would be of little value. Results are evidence based.

Data from the pilot show that providers can reduce inappropriate HTDI use by using this model. In fact, one study of the data found a 10 percent improvement in the utility of scans ordered when using the model.

Based on the pilot program, ICSI made this model available to all medical groups and hospital-based clinics in Minnesota. The use of decision support has contributed greatly to reduce inappropriate HTDI scans. While Minnesota saw an 8% annual increase in scans from 2003-2006, it has seen only a 1% increase since 2007, saving an estimated $124 million.

And another benefit having nothing to do with dollars and cents but everything to do with delivering excellent and safe care: Using the model decreases exposing patients to unnecessary radiation.

Lessons Learned

- Appropriateness criteria are not as robust as providers would like. When the American College of Radiology creates a national standard of criteria, that will help the situation.
- Integrating into EMRs require the EMR vendors to be interested in this integration, and meaningful use criteria help support this.
- Implementing the model within an organization is much easier than across a region or state, which requires a great deal of consensus building.
- Integrating into an EMR better supports clinical workflow, while a web-based approach is more likely used away from the point of order (e.g., at a call center or by non-physician staff).