Journal of the National Comprehensive Cancer Network

Abdominal Pain With Boring-Like Character: The Revolution Is Yet to Come

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The implementation of electronic medical records (EMRs) heralds a new era that should result in novel opportunities to enhance patient care. From the obvious increased clarity and easier access to patients' medical information that the adoption of these systems have brought to medical practice, EMRs are evolving toward incorporating sophisticated tools for clinical decision support (CDS) and process automation.[1] Furthermore, EMRs, along with coding systems such as the International Classification of Diseases (ICD) for disease diagnosis, symptoms, and procedures, have the potential to greatly facilitate epidemiologic studies, disease registries, clinical trials, and medication safety monitoring.

One area that can benefit tremendously from these systematized tools is colonoscopy. Colonoscopies have been shown to dramatically decrease the risk of colorectal cancer (CRC) incidence and related mortality.[2,3] Indication for colonoscopy is a critical aspect because this is a key parameter to assess important features such as CRC screening rates or quality indicators for the procedure.[4] In fact, several of the quality indicators rely on the knowledge of procedure indication.[5] Nevertheless, identifying the correct indication for colonoscopy on the EMR has proven to be challenging at best.

In order to tackle this issue, the accompanying article by Naveed et al elsewhere in this issue (page 920) compared, at a single Veterans Affairs site, the performance features for accurate definition of indication with different approaches, such as referring provider or endoscopist impression versus an administrative algorithm.[6] Gold standard was manual traditional EMR review. The authors retrospectively reviewed 400 patients aged ≥18 years undergoing colonoscopy during a 1-year period. Referring provider impression was recorded from the colonoscopy referral order and progress notes from the corresponding clinic visit or telephone encounter. Endoscopist impression was recorded from the procedure and preprocedure history and physical notes from the day of colonoscopy. The administrative algorithm used a validated set of ICD-9 codes from the periprocedural period to determine indication.[6] Indication was divided in 4 variables: diagnostic, surveillance, average-risk screening, and high-risk screening.

The authors found that both referring provider and endoscopist impressions of the indication were more accurate than the administrative algorithm they tested. In fact, the latter had a dismal accuracy of only 45% versus 87% and 84%, respectively, for referring provider and endoscopist. Furthermore, the administrative algorithm also had a very poor specificity (40.3%) and positive predictive value (PPV; 43.1%) compared with referring provider and endoscopist impressions (specificity: 93.7% and 84%, respectively; PPV: 87.7% and 75.1%, respectively). Although overall results strongly favored referring provider/endoscopist impressions as a more reliable mechanism to identify colonoscopy indication than the administrative algorithm, there was a clear need for improvement for the former. In fact, in 15% of the cases, referring provider and endoscopist impressions failed to accurately classify the indication. Furthermore, there were some extremely worrisome aspects, such as the very poor accuracy of endoscopist impressions for patients with a family history of colon cancer.

Lee et al[5] tested another algorithm for the proper identification of colonoscopy indication within a large health insurance system and found it performed better than the algorithm discussed by Naveed et al. Key to the improved performance of the algorithm used by Lee et al seems to be the inclusion of the pathology database variables. However, because neither of these studies have been replicated in other health systems, it is still hard to gauge the actual performance of the proposed tools.

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In any case, there are some considerations that can be made if clinicians aim to take full advantage of what the new electronic environment can offer. First and foremost, the performance of any factors we wish to analyze will strictly depend on the accuracy of the information entered into the EMRs. Thus, systems need to be developed to help guide toward proper classification of the different parameters. Integration of the new instruments, such as CDS tools, in EMRs could be key to facilitating an accurate classification while they integrate different variables. These types of tools can help minimize inaccuracies that still occur in a significant number of cases assessed by physicians, such as in the study by Naveed et al. Given the overwhelming number of variables, it may just not be possible to significantly improve the provider's accuracy without the development and application of the mentioned tools.

The implementation of EMRs is truly in its infancy and, so far, has become one of the most discouraging aspects of physicians' professional activities, as many polls have demonstrated.[7] Eventually, with the proper use of many different new tools and an emphasis in making them a true vehicle for healthcare delivery improvement, EMRs will no doubt also become immensely powerful research tools. Furthermore, I would venture to say that EMRs will eventually liberate clinicians so we can again focus on listening to and better understanding our patients. After all, how in the world can we remember "Abdominal pain with boring-like character" is not only an ICD-10 code but also that its number is N.R10-9?

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