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Clinical decision support tools assist nongenetics providers

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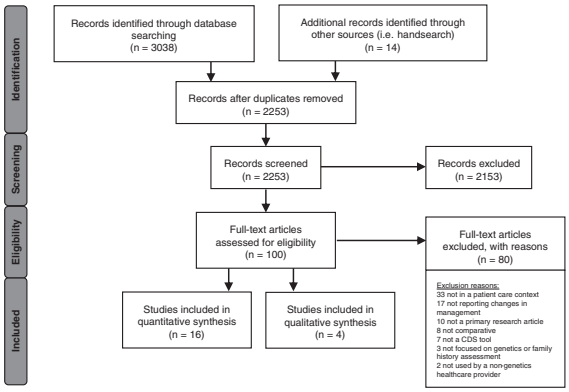

Determining when to order genetic tests, refer patients to genetics specialists, or change treatment or surveillance based on genetic risk factors remains a challenge for nongenetics specialists. Clinical decision support (CDS) tools—software that guides assessments or recommendations at the point of care based on clinical management guidelines, best practices, and/or research evidence—may facilitate appropriate management. In this issue, Sebastian and colleagues assess the clinical utility of CDS tools to aid nongenetics providers in making appropriate clinical decisions for genetics-related care. The researchers conducted a systematic literature review of studies on management changes by nongenetics clinicians using CDS tools as part of patient care. They included 4 qualitative and 16 quantitative studies, encompassing 17 CDS tools, in the review. The analysis revealed that genetics CDS tools modestly increase management changes made by nongenetics providers. Compared with standard of care, CDS tools increased changes in management in 75% of quantitative studies. Pharmacogenetic CDS tools facilitated management changes such as medication choice, dose, and use of multiple medications. Other tools increased referrals to medical genetics professionals and rate of screening for cancer or carrier status. Most changes in management were deemed appropriate as they used evidence such as guidelines or Food and Drug Administration information. Whether clinicians used CDS tools varied from 15% to 83%; however, the vast majority of users (95%) reported very high satisfaction with the tools. Together the findings indicate that CDS tools improve nongenetics providers' risk assessment and promote appropriate management changes. The researchers conclude that genetics CDS tools are a promising aid to nongenetics providers but that further evaluation of CDS tools on decision making and patient outcomes is necessary. —*V. L. Dengler, News Editor*

Toward genomic data integration into the electronic health record

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The American College of Medical Genetics and Genomics (ACMG) recently outlined a framework for optimally integrating genomic data into the electronic health record (EHR). The PennChart Genomics Initiative (PGI), a multidisciplinary collaborative effort of Penn Medicine with Epic System Cooperation and the commercial genetic testing laboratory Ambry Genetics, operationalized the guidelines to improve their EHR, known as PennChart, to better deliver precision medicine. The researchers undertook a two-phased process. First, as most genetic results are reported in unstructured PDF documents, the team standardized the real-time integration of unstructured genetic data into the EHR by establishing common procedures, including creating a document type specifically for genetic testing results. They also used the system when importing legacy data. Next, PGI tackled integrating structured data into the EHR. Penn Medicine experts developed standard operating procedures for manual and automated entry of discrete genetic variant information into Epic's Genomics Module. To facilitate automated entry, PGI worked with Ambry Genetics to implement computerized order entry. The partnership also enables automatic import of results as variant reclassification occurs. PGI additionally utilized Epic's Genomic Indicators to link genetic results to clinical decision support tools. To protect patients from confusion or distress upon receiving results, PGI developed a method to retain data until patients are counseled, after which results are released to nongenetics providers and a secure patient portal. Data can also be segregated for privacy. The authors conclude that EHRs are powerful tools for delivering precision medicine and note that they are committed to sharing their procedures and documentation with the medical genomics community to further optimize integration of genetic data into EHRs and improve patient care. —*V. L. Dengler, News Editor*

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