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Genomic decision support systems and retail access to genetic screening will drive continued adoption of precision medicine

Written by Don Rule, Chief Executive Officer, Translational Software | February 13, 2018 |

It is exciting to see the growing awareness and adoption of precision medicine both within the medical community and the population at large.

Looking ahead, I see two areas for continued advancement in precision medicine, including the increased integration of precision medicine into the standard clinical workflow, and the continued rise of consumerism in genetic testing.

Healthcare organizations of all types, including health systems, academic medical centers, clinical laboratories, and IT vendors are implementing genomic testing and clinical decision support capabilities to advance precision medicine. The field of pharmacogenomics (PGx) will continue to expand with a focus on integrating genetic data into the existing clinical workflow, making it easily accessible and actionable for physicians to guide treatment decisions based on a patient's genetic makeup at the point of care. We may soon see genetic testing become the routine standard of care in a number of areas, such as clopidogrel testing for all patients undergoing catheterizations; testing for certain classes of antidepressants; and pre-surgical screening for both warfarin and pain medications.

Getting the information into the clinical workflow will require interoperable IT tools and application programming interfaces (APIs) that provide the ability to access, analyze, and integrate the data for use with other health systems without significant IT development, investment, or compromise to existing system performance. APIs developed using the Fast Healthcare Interoperability Resources (FHIR) specification, an open-sourced standard based on HL-7 for exchanging healthcare information to ensure interoperability and security, is one of the leading tools available to enable health systems and software developers to accelerate development of new capabilities and applications. The use of FHIR-based APIs that launch from within the electronic health record or medication management system into a genomics-based repository will allow clinicians to both identify the appropriate genetic test to order and receive actionable results from genomic tests within the existing workflow to make informed treatment decisions at the point of care. The PGx results of a single genetic test can be used to help guide

treatment decisions throughout the patient's life, serving as a valuable once-in-a-lifetime resource for precision medicine.

While it can take time to bring new technologies into clinical practice, the genetic testing market is growing rapidly; patients are increasingly aware that testing is available and are eager to use it. With increased public awareness of clinical genomics and a decline in the cost of testing, we will see the continued rise of consumerism in precision medicine as individuals increasingly take control of their own healthcare to understand their personal health risks, optimize health and longevity, or assist family members with complex health and medication issues.

Genetic testing kits and retail access to genetic screening promises to make testing more accessible and affordable to consumers for home use, providing even greater opportunity to integrate genomic data into clinical treatment decisions and help advance the use and acceptance of precision medicine. Smart, progressive clinical organizations will harness this growing patient demand by proactively offering genomic testing capabilities as a way to attract new customers. The rise in consumer interest will also result in more large employers offering genetic testing and counseling services as a voluntary health benefit for employees to help them better manage their health, detect and prevent genetic-based health issues, and reduce treatment costs.

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