A Multidisciplinary Precision Medicine Service in Primary Care

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THE INNOVATION

A need for accessible genomic services is growing with the rise of commercial genetic testing. Because of this, primary care clinicians may increasingly encounter genetic cancer risk assessment, pharmacogenomics, and direct-to-consumer genetic testing in routine clinical care. Such a rapid increase in testing options with limited access to genetic specialty services creates an opportunity to offer genetic testing and accompanying services in primary care. In July of 2019, the University of Pittsburgh Medical Center (UPMC) Health System launched the Primary Care Precision Medicine clinic, an innovative multidisciplinary care model to deliver genomic testing and services in the primary care setting.

WHO AND WHERE?

Our multidisciplinary clinic model includes a primary care physician with training in genetics, a pharmacist specializing in pharmacogenomics, and 2 genetic counselors. The service is housed in the Department of Family Medicine at the University of Pittsburgh and is among a network of academic family medicine health centers.

HOW

Our clinic accepts referrals and electronic consultations from primary care clinicians within and outside the UPMC Health System. Before scheduling, patients are triaged telephonically by the clinic manager. At the initial visit, the genetic counselor begins by collecting a detailed personal and family history. Together, the genetic counselor and the physician determine the need and clinical utility of genetic testing. If a decision is made to test, informed consent is collected by the genetic counselor. Next, the patient meets with the pharmacist, who performs a comprehensive medication review. If pharmacogenomic testing is sought and appropriate, the physician orders a multi-gene pharmacogenomic panel. The risks and benefits of pharmacogenomic testing are reviewed with the patient by the pharmacist. Lastly, the physician assesses the patient, documents the resulting care plan, and bills for the visit.

At the follow-up visit, genetic test results are returned to patients by the genetic counselor. Likewise, pharmacogenomic test results are returned to patients by the pharmacist. For genetic results, the genetic counselor and physician work together to provide the patient with interpretation. Supportive education, counseling, and cascade testing are also offered. For pharmacogenomic results, the pharmacist and physician work together to make changes to current pharmacotherapy using evidence-based guidelines. Pharmacogene variants with actionable prescribing recommendations are documented in the electronic health record for future use. Lastly, the team triages patients to appropriate genetics centers when additional care and follow-up are warranted. Detailed care plans including genetic and pharmacogenomic results and follow-up for ongoing management are shared back with the referring clinician via consult notes in the electronic health record. Consult notes also provide the referring clinician with education to expand their knowledge and understanding of genetic disease, conditions, and variants.

LEARNING

A multidisciplinary primary care team focused on precision medicine can expand patient access to genetic services. Since launch, we have received a total of 99 referrals from other primary care clinicians. Of these referrals, 61 were for genetic cancer risk assessment, 29 for pharmacogenomic testing, and 9 for validation and interpretation of direct-to-consumer testing. Our experience provides an innovative and accessible approach to offering intermediate genetic services care for patients in the primary care setting. The utilization of our services by other primary care clinicians suggests that access to our services has heightened clinician awareness and collaboration to address individual patient's genetic needs. Other health systems may seek to replicate our innovative model to expand precision medicine services in their local communities.

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Key words: precision medicine; direct-to-consumer; genetic testing; pharmacogenomics; genetic cancer risk assessment; prenatal carrier screening

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