



PHRONETIK

Genomic Testing with Telehealth for Independent Pharmacists

**INTEGRATING TELEHEALTH FOR
PHARMACOGENOMICS**

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Executive Summary

In recent years, advancements in genetic and genomic testing have paved the way for more personalized and precise healthcare, especially in the field of pharmacogenomics (PGx), where genetic insights guide medication management tailored to individual genetic profiles. As healthcare shifts toward digital transformation and telemedicine, integrating these testing capabilities into independent pharmacist practices presents a unique opportunity. By embracing genetic testing combined with telehealth, pharmacists can revolutionize patient care and expand service offerings for historically underserved and underrepresented communities—including rural areas, veterans, women, those with chronic conditions, and communities of color.

The integration of PGx services in pharmacies can significantly impact patient outcomes, particularly among populations who are disproportionately affected by adverse drug reactions, medication inefficacy, and lack of access to specialized healthcare. This paper examines the landscape of genetic testing in pharmacy practice, the benefits of telehealth integration, and the substantial potential for independent pharmacists to leverage genetic testing as a key component of healthcare for marginalized communities. The discussion focuses on how these services can address healthcare inequities and promote better health outcomes across diverse populations.

Benefits of Integrating Genetic and Genomic Testing in FQHCs

The adoption of genetic and genomic testing in healthcare has grown steadily as sequencing technology becomes more affordable. The cost of sequencing a human genome has plummeted from over \$1 billion in the early 2000s to around \$600-\$1,000 today, making genetic insights more accessible to a broader range of healthcare providers and patients. Yet, despite the potential benefits, these advancements remain largely out of reach for many underserved populations due to barriers such as cost, limited access to specialized healthcare, and lack of awareness of insurance coverage for genetic testing.

The disparities are particularly pronounced in certain demographics. Studies show that communities of color, rural populations, and veterans experience a disproportionate burden of chronic diseases such as cardiovascular conditions, diabetes, and cancer, which could benefit from genetic and genomic insights. The lack of access to specialized care in rural and underserved areas further compounds these issues. For instance, a study by the American Association of Clinical Oncology (ASCO) found that African American and Hispanic patients are less likely to receive genetic testing for hereditary cancers, limiting their access to preventative and targeted treatments.

In addition, many patients and even healthcare providers remain unaware of insurance coverage options for genetic testing. Both Medicare and Medicaid offer coverage for genetic tests under certain conditions, but these services are underutilized in marginalized communities due to lack of awareness and understanding of the benefits. Telehealth, however, offers a promising solution. By leveraging virtual consultations and remote testing methods, independent pharmacists can deliver personalized medicine services to patients who otherwise face significant barriers to access, thereby bridging the gap between advanced healthcare and underserved populations.

Genetic and Genomic Testing for Diverse Populations

The need for precision medicine is especially critical for underserved communities, as diverse populations can exhibit unique genetic markers that influence drug metabolism, disease progression, and treatment efficacy. Pharmacogenomics (PGx), a branch of genomics that assesses how an individual's genetic profile affects their response to medications, offers an opportunity to tailor drug prescriptions based on each patient's unique genetic makeup. This is especially relevant for populations with high rates of chronic illness and for veterans, who may have complex health conditions influenced by genetic and environmental factors.

Independent pharmacists are well-positioned to adopt PGx services and provide tailored medication counseling, particularly in conjunction with telehealth. For example, patients in remote or underserved locations could undergo genetic testing through non-invasive buccal swabs and receive results and counseling virtually. This model is essential for increasing access to precision medicine in areas lacking specialized medical facilities and can support patients who may have previously been excluded from such services.

Benefits of Telehealth Integration

Telehealth provides independent pharmacists with a powerful tool to expand their service offerings and reach patients who face barriers to accessing in-person care. With telehealth integration, pharmacists can:

- **Conduct Remote Consultations:** Pharmacists can provide PGx consultations and explain test results virtually, offering flexibility for patients who cannot travel to a pharmacy.
- **Educate Patients and Providers:** Through telehealth, pharmacists can educate patients on the importance and implications of genetic testing and collaborate with other healthcare providers on personalized treatment plans.

- **Support Self-Collection and Follow-Up:** Telehealth enables pharmacists to instruct patients on sample self-collection, track progress, and conduct follow-up sessions remotely, providing continuity of care even for patients in remote areas.

Telehealth integration also addresses social and economic barriers by reducing the need for travel, which can be particularly burdensome for rural and low-income populations. By offering personalized medication plans through telehealth, pharmacists can deliver essential care to those who might otherwise miss out on healthcare due to logistical challenges.

Economic and Social Impact of Integration

Integrating genetic and genomic testing services with telehealth capabilities in independent pharmacies offers profound economic and social benefits, significantly impacting underserved communities by enhancing healthcare access, promoting early intervention, and supporting local economic growth. This model serves as a cornerstone for strengthening the role of independent pharmacists, positioning them as accessible healthcare providers who can deliver advanced services to patients in need. Below is an outline of the community and economic impacts of this integration, detailing the potential engagement benefits for both individuals and the wider community.

1. Reduced Healthcare Costs Through Proactive Wellness

Independent pharmacists are often highly trusted, accessible, and deeply embedded within their communities, making them ideal conduits for preventive healthcare. By offering genetic and genomic screening, pharmacists enable early identification of genetic predispositions to chronic conditions, allowing for proactive intervention. Identifying risk factors for diseases such as cardiovascular disease, diabetes, or hereditary cancers early can lead to interventions that delay or prevent disease onset. These proactive steps result in substantial cost savings by reducing the need for expensive, long-term treatments and hospitalizations associated with advanced-stage illnesses.

For public health systems and insurers—including Medicaid and Medicare—this shift towards preventive care has far-reaching financial implications. By reducing the overall healthcare burden and reallocating resources from reactive care to proactive wellness, community healthcare programs can operate more sustainably. Additionally, local governments may find new cost-saving opportunities through the partnership with community pharmacists, as they promote population health initiatives and reduce the incidence of chronic disease-related expenses.

2. Improving Health Equity and Access to Care

Integrating genetic and genomic services with telehealth at local pharmacies addresses significant gaps in health equity, particularly for marginalized communities. Many underserved populations face barriers to accessing specialist care and advanced diagnostics, especially in rural and low-income

urban areas. Independent pharmacies serve as accessible health hubs for these communities, and adding genetic testing allows pharmacists to provide essential services to individuals who may not otherwise engage with primary care providers or specialists due to geographic, financial, or cultural barriers.

With telehealth integration, patients gain remote access to genetic counseling, personalized wellness consultations, and follow-up care. This convenience encourages patient engagement in preventive health, reduces transportation costs and time, and minimizes missed appointments. This model supports health equity by ensuring that all individuals, regardless of socioeconomic status or location, can access state-of-the-art healthcare solutions tailored to their needs.

3. Enhancing Community Engagement and Building Trust

Independent pharmacists are often viewed as trusted community figures and expanding their role to include genetic and genomic services fosters greater community engagement and strengthens relationships between patients and healthcare providers. By offering high-quality, personalized care, pharmacists can encourage residents to proactively manage their health and seek timely medical advice. Educational programs provided through pharmacies—such as workshops on genetic testing, understanding family health history, and the importance of preventive care—can demystify genetic and genomic concepts, empowering patients with knowledge.

This community-centric approach builds trust in local healthcare providers and encourages individuals to participate in regular wellness checks. As pharmacists establish themselves as reliable sources of information and care, they can promote further engagement through partnerships with local organizations, schools, and public health initiatives. For example, pharmacists might collaborate with community centers to offer genetic screening sessions or work with local schools to educate students and parents on hereditary health risks. These outreach efforts create a supportive, informed community and lay the foundation for a culture of preventive wellness.

4. Strengthening Local Healthcare Networks

Integrating genetic and genomic testing with telehealth in independent pharmacies has the potential to build a more cohesive and resilient local healthcare network. By linking genetic testing results to patient electronic health records (EHRs), pharmacists can streamline information sharing

with primary care providers, specialists, and other healthcare professionals. This connectivity enables more coordinated care and ensures that any insights gained from genetic screenings are available to all relevant providers.

Moreover, local healthcare networks can use aggregate data from these testing initiatives to inform public health policy, improve disease surveillance, and allocate resources based on community needs. This data-driven approach provides municipalities and public health departments with valuable insights into the prevalence of hereditary conditions, enabling targeted interventions. For example, if genetic testing data shows a high risk for cardiovascular diseases within a community, local health initiatives could focus on heart health awareness and preventive programs.

5. Economic Empowerment and Job Creation

Integrating genetic and genomic testing with telehealth into community pharmacies creates new economic opportunities and job growth. Pharmacists can expand their services, requiring additional support from pharmacy technicians, administrative staff, and clinical specialists to manage the increased service offerings. This growth in service offerings provides career advancement opportunities within the local pharmacy ecosystem, potentially increasing wages and elevating local employment rates.

Moreover, as independent pharmacists become more integral to preventive health services, they can offer specialized training for pharmacists, technicians, and support staff to manage genetic screening protocols. This fosters workforce development and equips employees with valuable skills in genomics and precision medicine—fields expected to grow rapidly in demand. These developments bolster the local economy by promoting a skilled workforce, attracting talent, and reinforcing the value of independent pharmacies within their communities.

Conclusion

The integration of genetic and genomic testing, particularly through pharmacogenomics, offers independent pharmacists a pathway to revolutionize healthcare for underserved populations. By leveraging telehealth capabilities and PGx services, pharmacists can bring precision medicine to communities that face significant healthcare disparities. This proactive approach not only improves patient outcomes but also positions independent pharmacists as essential partners in addressing gaps in care for marginalized groups.

Phronetik, with its advanced capabilities in genetic and genomic testing and telehealth integration, is uniquely poised to support independent pharmacists in delivering these services. By providing a comprehensive laboratory network, telehealth tools, and support for education and collaboration, Phronetik empowers pharmacists to lead the charge in personalized medicine, ensuring equitable healthcare access for all.

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