



## Role of Genetics and Genomics Testing in Reducing Health Disparities

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### DESCRIPTION

Clinical genetics/genomics testing is the use of genetic/genomic analysis to diagnose and detect diseases, predict disease risk, and assess treatment options. The knowledge gained from this testing is invaluable for healthcare providers in optimizing patient care and improving population health outcomes. The implications of clinical genetics/genomics testing on health equity can be both positive and negative. On the positive side, it can provide insight into a patient's genetic makeup that can help inform personalized medical treatments. Additionally, it can lead to early detection of diseases which could improve overall outcomes and save lives.

It is important for healthcare professionals to remember that clinical genetics/genomics testing should be used with caution when considering its impact on health equity. Healthcare providers should ensure all patients have equal access and opportunities when it comes to genetic/genomic testing and work with other stakeholders such as insurance companies and medical laboratories towards achieving this goal. Genetic and genomic testing has revolutionized the healthcare industry, allowing for a much deeper understanding of individual health. This increased knowledge can be used to adjust treatment options to best fit each patient's needs. Unfortunately, access to this revolutionary technology doesn't come without its challenges. While many individuals have sufficient access to genetic/genomic testing, some populations are marginalized and lack equitable access.

Low-income and minority communities in particular may not have access to the same levels of care and resources as others. The increased accuracy of genetic/genomic testing has opened doors for improved diagnosis and prevention of diseases, but without targeted efforts to bring these services into underserved communities, these populations may continue to receive unequal care. Ensuring equitable access requires education on the merits of genetic/genomic testing, as well as programs that provide low-cost or free services for those most in need of it. It is also important that healthcare providers understand the

potential implications of certain tests, so they can better serve their patients.

The effects of genetics and genomics on health disparities are increasingly coming to shine. As technology advances, the capacity to identify, analyze, and utilize genetic information has become more widely available. This ability to explore the human genome and uncover gene-disease relationships has enabled personalized medicine, allowing healthcare providers to customize treatments based on individual patient's needs. Additionally, this has allowed healthcare providers to better understand how different populations may be more vulnerable to certain health conditions due to their genetics. By recognizing these differences in risk factors, clinicians can provide targeted interventions that can reduce or even eliminate potential health disparities between diverse populations.

In many cases, clinical genetics/genomics testing is used as an early diagnostic tool for specific illnesses or medical conditions that have a genetic component. For example, testing is used to determine if certain inherited conditions such as sickle cell anemia are present in newborns and infants. Early diagnosis allows for earlier treatment or modifications in lifestyle that can help manage the condition more effectively. Similarly, prenatal testing can help detect genetic conditions before birth and allow parents make medical or lifestyle decisions that may reduce risk or harm associated with the condition.

In addition to providing early detection of genetic conditions and diseases, genetic/genomic testing also provides valuable insight into the unique genomic makeup of individuals from different racial and ethnic backgrounds. This information can be utilized by healthcare professionals to develop treatments tailored specifically for different population groups based on their genetic predispositions. For instance, adjusted medications may be used for particular ethnic groups due to differences in metabolism or response rates based on their genes.

Clinical genetics/genomics testing offers great potential to improve the quality of life for people through early detection and diagnosis of certain conditions, as well as to inform treatment

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options. However, despite its assurance, there are still challenges that must be addressed in order to ensure that the benefits of this technology are accessible to all populations regardless of

socio-economic status. Exploring the impact of clinical genetics/genomics testing on health equity is an important task that requires thoughtful consideration and creative solutions.