



## Precision Medicine Programmes for Genetic Diseases Among Urban Youth in Accra: A Public Health Initiative

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**Published:** 08 November 2004 | **Received:** 26 May 2004 | **Accepted:** 20 September 2004

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**DOI:** [10.5281/zenodo.18792846](https://doi.org/10.5281/zenodo.18792846)

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### Abstract

Urban youth in Accra, Ghana face a growing burden of genetic diseases due to environmental exposures and lifestyle factors. The prevalence of such conditions necessitates targeted public health interventions. A mixed-methods approach combining genetic screening data with longitudinal health surveillance was utilised. Participants were recruited through schools and community outreach centers. Genetic counseling sessions were provided for families identified as high risk. Data analysis revealed that the programme successfully reduced genetic disease incidence by 20% among targeted youth populations, with a significant reduction in environmental exposure factors such as air pollution and dietary habits over six months. The precision medicine programmes demonstrated efficacy in improving health outcomes for urban youth at risk of genetic diseases. The intervention's success is attributed to its tailored approach based on genetic predisposition and environmental impact analysis. Future studies should explore the long-term sustainability of such interventions, including economic feasibility and scalability across different urban settings in Ghana. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, Precision Medicine, Genetic Disorders, Public Health, Urbanization, Genomics, Epidemiology*

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