

# Complexities of Clinical Genetics Consultation

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## Introduction

Because most chromosomal and mendelian genetic disorders are uncommon, few physicians will come across them during their careers. However, it is predicted that almost one in every 300 live births in North America is affected by these rare Mendelian illnesses. Increased exposure to clinical genetics education alone is insufficient in light of the rapid pace of discovery without also emphasising the significance of collaboration with genetics professionals. For evaluation and assistance, generalists and nongenetics experts frequently collaborate with medical geneticists and genetic counsellors. The necessity for collaboration with genetics is growing as the field of genetics expands to include prevalent diseases with multifactorial inheritance. This opportunity to improve patient care may go unnoticed if clinicians are not exposed to clinical collaboration with genetics professionals during their clinical years.

In the United States, there are around 1,500 medical geneticists, with more than 180 employment openings in a single year. However, less than half of the approximately 83 places available for graduate medical training in genetics are filled each year, indicating a persistent supply gap between demand and supply for patient care and education. Over the last 50 years, the field of genetic counselling has grown significantly, dramatically increasing the availability of genetic services. According to recent estimates, there are 3,100 genetic counsellors working in the United States.<sup>3</sup> The Accreditation Council for Genetic Counseling has authorised 49 genetic counselling master's degree training programmes in North America, totaling just over 450 clinical training opportunities. In the United States, less than

half of training programmes are based within a medical school, but all four training programmes in Canada are located within a medical school. However, not all genetic counselling training programmes include integration with other health care professions in training, particularly medical students, and as a result, physicians are often ignorant of the possibilities for interprofessional collaboration. Increased exposure to clinical genetics practise for both medical and genetic counselling students throughout training is therefore crucial for future physician recruitment as well as collaboration between non-genetics physicians and genetic counsellors. The basic or foundational sciences and clinical sciences are typically divided into two categories in medical school courses. Medical students typically compartmentalise their learning into these two categories as a result of this structure, making it difficult for them to apply core knowledge in the clinical context without reinforcement. The fact that genetics instruction is primarily taught in the first year of medical school,<sup>6</sup> the year with the highest proportion of foundational science learning, may lead students to view genetics as a basic rather than a clinical science (as reported by 75% of North American institutional representatives). Because medical genetics is such a dynamic field, exposure to it throughout clinical years is crucial for conveying the actual extent of the field. However, only 26% of respondents said genetics information was included during years 3 and 4, which are normally focused on clinical education. Medical students rarely witness a genetics consultation's extensive history and physical examination, as well as the close interaction between a doctor and a patient or family.

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