



Genetic Counseling Training, Patient Safety, and Regulation in Brazil

About the Latin American Professional Society of Genetic Counseling (SPLAGen)

The SPLAGen is a collaborative community of genetic professionals motivated to expand knowledge and access to genetic counseling services in Latin America.

Acknowledgements

The development of this Position Statement has been led by the Board of Directors.

Purpose

This position statement is in support of the Brazilian Ministry of Health initiative of the Multiprofessional Residency Program in Genetic Counseling and responds to concerns raised by the Brazilian Society of Medical Genetics and Genomics (SBGM) regarding the training of Genetic Counselors (GCs) in Brazil.¹ It clarifies how widely recognized standards for genetic counseling education align with Brazil's regulatory, academic, and healthcare frameworks while addressing the core concerns of patient safety, quality of care, and evidence-based practice regulation within the Sistema Único de Saúde (SUS).

Genetic Counseling as a Widely Recognized Health Profession

Genetic counseling is a distinct, widely recognized healthcare profession, formally established more than five decades ago, with clearly defined scopes of practice, accredited graduate-level training programs, certification processes, and professional standards in many countries and regions in North America, Europe, Asia, Africa, and Oceania.²

Widely accepted consensus defines genetic counseling as a professional activity centered on four core elements: 1) Risk assessment through interpretation of family and medical histories; 2) Education on inheritance, recurrence risk, management, and prevention; 3) Communication of risks and benefits of genetic tests, selection of appropriate genetic tests and explanation of test results; and 4) Psychosocial support focused on promoting informed decision-making and adaptation.³

¹ Sociedade Brasileira de Genética Médica e Genômica (SBGM), *A SBGM e a Proposta de Residência Multiprofissional Em Aconselhamento Genético*.

² Ormond et al., "The Global Status of Genetic Counselors in 2023."

³ Ormond et al., "The Global Status of Genetic Counselors in 2023"; Middleton et al., "Scope of Professional Roles for Genetic Counsellors and Clinical Geneticists in the United Kingdom"; Resta et al., "A New Definition of Genetic Counseling."

Multidisciplinary Training Models and Team-Based Care

In established healthcare systems, genetic counselors are integral to multidisciplinary care models, particularly in oncology, rare diseases, reproductive health, and preventive medicine.⁴ Properly trained genetic counselors have become an invaluable clinical asset. They are widely recognized and authorized to practice the four core elements outlined above within defined and ethical boundaries, and without issuing medical diagnoses or prescribing treatment.⁵

By adhering to professional standards, genetic counselors expand access to genomics services while providing safe, evidence-based care. Their involvement has been shown to improve patient outcomes, including better understanding of complex genetic information, greater empowerment and sense of personal control, and reduced decisional conflict, worry and other adverse psychological responses.⁶ They also play a critical role in mitigating patient safety risks by guiding appropriate test selection, ensuring accurate interpretation of results, and coordinating care, thereby reducing errors in settings with limited genetics expertise.⁷

Furthermore, genetic counselors contribute to the efficient use of healthcare resources by optimizing test utilization and freeing up consultant time for other clinical duties, all while maintaining high standards of care and expanding access to genetic services.⁸

The Multiprofessional Residency Program in Genetic Counseling proposed by the Brazilian's Ministry of Health is therefore consistent with widely recognized standards and directly addresses structural workforce gaps relevant to Brazil's SUS.

Training Standards and Alignment with Brazilian Regulation

Genetic counselors are widely recognized as being trained through formal postgraduate programs that include structured academic education, supervised clinical training, competency-based assessment, and continuing professional development.⁹ These programs typically require master's-level education with approximately 50% of training devoted to supervised clinical

⁴ Catapano et al., "The Role of the Genetic Counsellor in the Multidisciplinary Team"; Paneque et al., "Complementarity between Medical Geneticists and Genetic Counsellors"; Vanneste et al., "Expanding the Primary Care Workforce by Integrating Genetic Counselors in Multidisciplinary Care Teams."

⁵ Vanneste et al., "Expanding the Primary Care Workforce by Integrating Genetic Counselors in Multidisciplinary Care Teams"; Biesecker, "Genetic Counseling and the Central Tenets of Practice"; Pierpont et al., "Genetic Basis for Congenital Heart Disease."

⁶ Athens et al., "A Systematic Review of Randomized Controlled Trials to Assess Outcomes of Genetic Counseling"; Madlensky et al., "A Rapid Systematic Review of Outcomes Studies in Genetic Counseling"; Mester et al., "Genetic Counselors."

⁷ Miller et al., "Genetic Counselor Review of Genetic Test Orders in a Reference Laboratory Reduces Unnecessary Testing"; Riley et al., "Improving Molecular Genetic Test Utilization through Order Restriction, Test Review, and Guidance"; Wakefield et al., "Reduction of Health Care Costs and Improved Appropriateness of Incoming Test Orders."

⁸ Wakefield et al., "Reduction of Health Care Costs and Improved Appropriateness of Incoming Test Orders"; Arscott et al., "A Case for Inclusion of Genetic Counselors in Cardiac Care"; Coleman et al., "Subspecialty Neurology Genetic Counselors—A Cost Effective Solution to Substantial Time Costs Associated with Genomic Testing in the Neurology Clinic."

⁹ Ormond et al., "The Global Status of Genetic Counselors in 2023"; Abacan et al., "The Global State of the Genetic Counseling Profession"; Skirton et al., "A Delphi Study to Determine the European Core Curriculum for Master Programmes in Genetic Counselling."

practice.¹⁰ Physicians routinely serve as educators and supervisors without delegating exclusive medical acts or encountering ethical conflict.¹¹

The European core curriculum for genetic counseling master's programs, developed through expert consensus, emphasizes competencies in counseling, psychological support, medical genetics, human genetics, ethics, law, sociology, and professional practice, which are all designed to ensure safe, effective patient care.¹² Similar frameworks exist in North America, where the Accreditation Council for Genetic Counseling (ACGC), the American Board of Genetic Counseling (ABGC), and the Canadian Board of Genetic Counselors (CBGC) certify practitioners who meet standards for competent genetic counseling services.¹³

The proposed residency program is compatible with Brazil's existing frameworks for health professional education in different medical fields regulated by the Ministério da Educação (MEC), and by the Ministério da Saúde and Comissão Nacional de Residências Multiprofissionais em Áreas da Saúde (CNRMS). This exceeds current standards for genetic counseling programs in some countries.

Policy Considerations for Brazil

To ensure patient safety and high-quality genetic services while addressing SBGM's legitimate concerns, SPLAGen supports regulatory approaches that include:

- **Nationally defined competency frameworks for genetic counseling** aligned with widely recognized standards and Brazilian healthcare needs.¹⁴
- **Accreditation of training programs through recognized academic and health authorities**, following established models for other health professions.
- **Mandatory supervised clinical practice**, ensuring hands-on experience under expert guidance.¹⁵
- **Ethical and legal oversight** appropriate to Brazilian law and professional standards.
- **Structured collaboration between genetic counselors and medical geneticists**, with clear role delineation that recognizes complementary rather than competing expertise.¹⁶

¹⁰ Paneque et al., "Thirty-Years of Genetic Counselling Education in Europe"; Redlinger-Grosse et al., "A Delphi Study to Prioritize Genetic Counseling Outcomes."

¹¹ Accreditation Council for Genetic Counseling, *Standards of Accreditation for Graduate Programs in Genetic Counseling*.

¹² Skirton et al., "A Delphi Study to Determine the European Core Curriculum for Master Programmes in Genetic Counselling"; Guimarães et al., "Guidelines for Genetic Counselling Supervision in Europe."

¹³ Accreditation Council for Genetic Counseling, *ACGC Practice-Based Competencies 2023*; American Board of Genetic Counseling (ABGC), *Certified Genetic Counselor (CGC) Exam Content Outline*; McEwen et al., "Developing Global Consensus about Core Knowledge and Skills for Genetic Counselor Education."

¹⁴ Skirton et al., "A Delphi Study to Determine the European Core Curriculum for Master Programmes in Genetic Counselling"; McEwen et al., "Developing Global Consensus about Core Knowledge and Skills for Genetic Counselor Education."

¹⁵ Skirton et al., "A Delphi Study to Determine the European Core Curriculum for Master Programmes in Genetic Counselling"; Paneque et al., "Thirty-Years of Genetic Counselling Education in Europe."

¹⁶ Catapano et al., "The Role of the Genetic Counsellor in the Multidisciplinary Team"; American College of Medical Genetics and Genomics, "Careers in Medical Genetics"; Manolio et al., "Opportunities, Resources, and Techniques for Implementing Genomics in Clinical Care"; Middleton et al., "The Role of Genetic Counsellors in Genomic Healthcare in the United Kingdom."

- **Ongoing evaluation and quality assurance** to monitor training program outcomes and professional practice standards.

These measures are consistent with widely recognized recommendations. The global expansion of genetic counseling services demonstrates that countries at various stages of professional development can successfully integrate genetic counselors when appropriate regulatory frameworks are established.¹⁷

Conclusion

The Multiprofessional Residency Program in Genetic Counseling proposed by the Brazilian Ministry of Health, with their substantial hours of training including extensive supervised clinical practice, aligns with widely recognized standards that have demonstrated improved patient outcomes and enhanced healthcare safety. The concerns raised by the SBGM regarding ethics, patient safety, and professional competency can be directly addressed through rigorous accreditation, competency-based assessment, mandatory supervision, and structured collaboration with medical geneticists - all elements present in successful genetic counseling programs worldwide.

¹⁷ Ormond et al., "The Global Status of Genetic Counselors in 2023"; Abacan et al., "The Global State of the Genetic Counseling Profession."