

ABGC Standards for Continuing Education

Introduction:

The American Board of Genetic Counseling (ABGC) views continuing education as essential to maintaining and increasing a genetic counselor's knowledge and skills in a rapidly evolving field. For board certified genetic counselors choosing to recertify by earning continuing education units (CEUs), the associated educational programs must meet a minimum set of standards to ensure that they reflect the profession's current needs and promote high quality genetic counseling services.

Continuing education in genetic counseling is an ongoing process consisting of formal learning activities that: (1) are relevant to genetic counseling practice, education, and science; (2) enable genetic counselors to keep pace with the most current scientific evidence regarding clinical practice and education as well as important legal, professional, or regulatory issues; and (3) allow genetic counselors to maintain, develop, and increase competencies in order to improve services to the public and enhance contributions to the profession.

The ABGC has established the following **Standards** for both Category 1 and Category 2 CEU programs to assure the continuing education is appropriate for recertification of a certified genetic counselor (CGC®). This document is intended to be a general overview with the purpose of guiding CEU Providers and Program Planners (defined below) with the development of CEU-eligible activities, and may not address every potential question, concern, or scenario that could arise. It is the responsibility of the CEU Provider to address these issues, and to bring them to the attention of ABGC, who will determine if updates to the **Standards** are needed.

The CEU Provider should determine how best to implement and adhere to these **Standards**. CEU Providers are expected to provide additional guidance and resources to Program Planners. ABGC may audit CEU providers to ensure that the **Standards** are being followed. CEU Providers may audit Program Planners to ensure that they are adhering to the **Standards**.

Currently, CEUs are provided to attendees of approved educational programs to document attendance and learning.¹ Since Category 2 CEU programs are not specifically designed for the continuing education of genetic counselors, Category 2 applications may be subject to additional requirements.

For the purpose of this document, ABGC defines the following:

¹ Category 1 CEUs

Category 1 CEUs can be granted for educational programs with content targeted to genetic counselors and pre-approved by an ABGC approved genetic counseling CEU provider.

Category 2 CEUs

Category 2 CEUs can be granted for educational programs with content that is relevant to a genetic counselor's continuing education despite not being primarily designed with the continuing education of a genetic counselor in mind. Category 2 CEUs are only available for educational programs that have been approved to offer continuing education credits or units by a reputable non-genetic counseling CEU provider.

CEU Provider—an organization or group who is responsible for the evaluation of educational programs to determine if they are CEU-eligible, and if so, how many CEUs could attendees obtain for attending or participating in the program. Currently the National Society of Genetic Counselors (NSGC) is the sole provider of Category 1 CEUs and issuer of Category 2 CEUs accepted by ABGC for recertification.

Program Planner—the individual or group who is planning a continuing educational program.

Standard 1: Content Requirement

The program content must be directly relevant to the professional knowledge and skills of graduate-level genetic counselors. The content must enhance the knowledge, skills, and abilities, beyond the basic level for preparation of genetic counselors, while being mindful of the need to periodically relearn, refresh, or update basic competencies or to adapt them to new practice situations or settings.

- The program content must be consistent with the NSGC *Code of Ethics* (See Appendix I).
- Program Planners are encouraged to consult the current genetic counselor practice-based competencies and detailed content outline when determining program content (See Appendices II & III).
- Category 2 applications must include a rationale which describes how the content is appropriate to the practice of genetic counseling using the detailed content outline (Appendix II).

Standard 2: Education Level

The education level for acceptable program content should be at or above the graduate level.

Standard 3: Instructional Methodology

The instructional methodology should be consistent with the learning objectives, accommodate various learning styles, and promote effective interaction between the learner and instructional resources. Appendix IV provides select references intended as guidance for Program Planners. CEU Providers are encouraged to share these and other relevant resources with Program Planners.

Standard 4: Program Format

ABGC acknowledges that effective educational programs can take many different forms and the educational landscape continues to expand to encompass new methods of teaching. The following chart outlines examples of the currently acceptable educational formats. The program format and learning environment should be appropriate for the education program's goals and desired outcomes.

	Live Programs	Enduring (self-directed) Programs
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In-person	Conference,* course, or workshop <ul style="list-style-type: none"> • Lecture or seminar • Journal club • Case conference • Series of live programs outlined above 	N/A
Online	<ul style="list-style-type: none"> • Virtual meeting • Online course or webinar 	<ul style="list-style-type: none"> • Recorded presentation, webinar, or podcast • Web-based program (interactive or non-interactive)
Hybrid	Part live instruction + part online instruction (may be live or enduring)	
Other	N/A	<ul style="list-style-type: none"> • Journal-based program • Other self-study programs

*Poster sessions are acceptable for CEUs when authors are present.

Standard 5: Program Planning

Program Planners

For Category 1 CEU, at least one certified genetic counselor (CGC®) must be included as either a member of the program planning committee or a consultant. The CGC® planning committee member or consultant should help to ensure the education program is applicable and relevant for genetic counselor continuing education. For Category 2 CEUs, a CGC® is not required to be included in the planning or instruction of the educational programs.

The application for Category 1 CEUs must include the CV of the Program Planning Committee Chair and any Co-Chairs. If at least one of these individuals is not a CGC®, then the CV of the CGC® consultant or committee member must also be included. The CEU Provider is responsible for confirming a CGC® is involved in the program planning.

Delivery Methods

Instructional methodology of an educational program must meet *Standard 3* and documentation for the rationale of the chosen instructional format must be provided to the CEU Provider. It is the CEU Provider's responsibility to determine whether the instructional methodology is appropriate.

Learning Objectives

Learning objectives must be consistent with the stated goal(s) of the educational program. Each learning objective must be clear, concise, measurable, and contain only one behavioral verb (See Appendix V). At least one learning objective is required for every 30 minutes of educational content AND at least one learning objective is required for each speaker. An exception can be made for panel discussions, where the number of objectives will be based on the length of the panel session and not on the number of panelists.

- Examples:
 - For a 45-minute educational session with one speaker, two objectives are required.
 - For a 30-minute educational session with two speakers, two objectives are required.
 - For a 30-minute panel discussion with five panelists, one objective is required.

Qualifications of Presenter(s)

The Program Planners are responsible for determining each presenter's qualifications and competence to deliver the material. Determining factors of qualifications include, but are not limited to: relevant education experience and/or credentialing, teaching and/or clinical experience, publications, and references. CEU Providers are not required to collect CVs from individual presenters; however, Program Planners should keep documentation of presenter qualifications for audit purposes.

Verification of Participation

Program Planners must specify the method by which attendance will be verified. The CEU Provider will determine if the method is acceptable. Examples of attendance verification methods include, but are not limited to: verified attendance list, sign-in signature sheet, badge scanning, live webinar attendance verification code, or completion of a quiz. The quiz questions can be the same as those utilized for the learning assessment (See *Standard 6*).

Submission Processes and Timelines for Ongoing Continuing Education Programs

All Category 1 CEU educational programs must be pre-approved. For ongoing educational programs (e.g., case conferences, journal clubs, etc.), a preliminary application that includes the purpose of the educational program, program format, estimation of CEU/contact hours, example agenda, estimation of number of attendees, attendance verification, self-assessment, and evaluation methods are acceptable for initial submission. Further required details such as the confirmed agenda, presenter names, learning objectives, and confirmation of contact hours can be submitted after completion of the program in accordance with the CEU Provider's guidelines.

Standard 6: Continuing Education Program Assessment and Evaluation

Assessment of Learning

Formal processes or procedures must be established during the planning of the continuing education program to assess achievement of learning objectives. While it is the Program Planner's responsibility to assess whether attendees have achieved the learning objectives, it is the CEU Provider's responsibility to ensure that the learning assessment method is appropriate. Attendees must be informed in advance that their achievement of the learning objectives will be assessed.

Examples of learning assessments include, but are not limited to: performance demonstration under real or simulated conditions, written or oral examinations, written reports, completion of a project, or a self-assessment.

Program Evaluation

Attendees must evaluate the overall quality of the educational program. The evaluation process should assess the degree to which the stated learning objectives were achieved without bias (See *Standard 7*), the program enhanced professional development, and the program implementation was effective.

While separate forms are acceptable, a sample combined self-assessment and program evaluation form is available in Appendix VI. CEU Providers are encouraged to share these guidance documents and other relevant resources with Program Planners.

Standard 7: Conflicts of Interest

Definitions:

Conflicts of Interest: ABGC defines conflict of interest (COI) as a situation in which a financial, professional, and/or personal affiliation has the potential to compromise an educator's judgment and may potentially bias a person's ability to objectively plan, implement, or review educational content. A conflict of interest may be actual, potential, or perceived. Potential and perceived conflicts of interest should be treated the same as actual conflicts of interest.

Financial Conflict of Interest: may include but is not limited to a wage, salary, contractor, consulting or speaking fee, teaching pay, honoraria, ownership interest, membership on advisory committee, review panel, board, or other activity from which a financial benefit is expected.

Professional Conflict of Interest: may include but is not limited to a situation where an individual receives a contract or a grant, manages funds, is a principal investigator, or is in a position to influence the outcomes of research.

Personal Conflict of Interest: may include but is not limited to a financial relationship such as those listed above that is held by one's spouse/partner.

For example, a genetic counselor presenting as part of an educational program may have a conflict of interest if he or she has a financial relationship with a commercial interest and is presenting content that is relevant to that commercial interest.

ABGC recognizes that actual, potential and perceived conflicts of interest can compromise the educational process. ABGC acknowledges that conflicts of interest may exist with industry-sponsored educational programs. ABGC also recognizes that genetic counselors and other experts employed by commercial entities possess expertise that is valuable to the continuing education of genetic counselors. Therefore, industry-sponsored educational programs may be eligible for CEUs. Program Planners and presenters are responsible for recognizing conflicts of interest and maintaining the highest level of integrity with respect to the educational content of the program.

ABGC aims to minimize the negative impact that a conflict of interest can have on continuing education through disclosure. To help assure full disclosure of any actual, potential, or perceived conflict, all presenters participating in CEU-related activities must comply with this conflict of interest standard. If a presenter does not adhere to the conflicts of interest standards outlined in this document, disciplinary action may be taken by ABGC.

The CEU Provider will be responsible for having the educational program presenter(s) sign a COI document acknowledging that he/she has read the policy, is in compliance with its standards, and has fully disclosed his/her actual, potential, or perceived conflicts of interest. This conflict of interest standard was designed to provide basic guidance and was not meant to be all encompassing nor address all nuances that could arise in review of a program. If needed, more specific guidance should come from the CEU Provider.

At the beginning of each presentation, presenters must provide verbal and written disclosures to attendees (conflicts of interest disclosure on slides is required) regarding any actual, potential or perceived conflicts of interest, and include the nature of the relationship. If the presenter does not have any conflict of interest, then the learner(s) must be informed that no conflict of interest exists. The Program Planners must provide information to attendees about the process for submitting complaints regarding conflicts of interest. CEU Providers must have a process to review and follow-up on any complaints.

Programs Planners should encourage presenters to implement techniques to manage and resolve conflicts of interest prior to the educational program; for example, by having a qualified unbiased third party conduct an impartial review of the learning objectives and presentation content. Documentation of the methods used to identify and resolve all conflicts of interest should be submitted to the CEU Provider.

Sessions that do not comply with this conflict of interest standard may be included as part of a larger educational program but are not individually eligible for CEUs. For example, a Category 1 CEU approved conference may include industry-sponsored sessions that do not meet the ABGC conflict of interest standard; however, these sessions are not eligible for attendees to earn CEUs, and therefore cannot be counted towards the overall CEUs awarded. Even if CEUs are not being awarded for individual sessions that do not comply with the standard, speakers are still responsible for disclosing conflicts of interest to attendees.

Conflict of Interest Standards for Educational Content

Every effort should be made to minimize the effect of any conflicts of interest on the overall program content.

Generic names (i.e., non-branded names) should be used. Specific products or commercial entities should neither be promoted nor disparaged. The content of an educational program may not contain advertisements for a specific product, company, and/or service.

No advertisements may be visible at the same time as the educational content. **Branded slide templates or logos cannot be used by any presenter.** Marketing materials cannot be made available in or around the education space immediately before, during, or immediately after an industry-sponsored program. If the educational content, materials, and/or slides are developed by a commercial entity, this should be disclosed on the COI form and to the attendees. The CEU Provider can require additional review of such materials.

Glossary

Category 1 CEUs

Category 1 CEUs can be granted for educational programs with content targeted to genetic counselors and pre-approved by an ABGC approved genetic counseling CEU provider.

Category 2 CEUs

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Conflicts of Interests (COI)

ABGC defines conflict of interest (COI) as a situation in which a financial, professional and/or personal affiliation has the potential to compromise an educator's judgment and may potentially bias a person's ability to objectively plan, implement, or review educational content. A conflict of interest may be actual, potential, or perceived. A perceived conflict of interest should be treated the same as if a conflict of interest actually exists. Financial Conflict of Interest may include but is not limited to a wage, salary, contractor, consulting or speaking fee, teaching pay, honoraria, ownership interest, membership on advisory committee, review panel, board or other activity from which a financial benefit is expected. Professional Conflict of Interest may include but is not limited to a situation where an individual receives a contract or a grant, manages funds, is a principal investigator or is in a position to influence the outcomes of research. Personal Conflict of Interest may include but is not limited to a financial relationship held by one's spouse/partner or any of the relationships mentioned above.

Continuing Education (CEU) Provider

An organization or group who is responsible for the evaluation of educational programs to determine if they are CEU-eligible, and, if so, and how many CEUs attendees may obtain for attending or participating in the program [currently the National Society of Genetic Counselors (NSGC) is the sole CEU Provider].

Program Planner

The individual or group who is planning a continuing educational program.

Continuing Education Unit (CEU)

CEU is a standard unit of measurement for continuing education and training. It is awarded for participation in an organized continuing education program. 1 CEU is equivalent to 10 educational contact hours.

Learning Assessment

A learning assessment is typically designed to measure specific elements of learning and often refers to strategies designed to confirm the knowledge an attendee gained by participating in the educational program. Learning assessment should also demonstrate whether attendees have met the stated learning objectives.

Program Evaluation

Program evaluation is a systematic method for collecting and analyzing information about an educational program's effectiveness and efficiency with regard to meeting its stated goals.

Appendix

I. NSGC Code of Ethics
Online only, [here](#).

II. ABGC Detailed Content Outline

Effective Date: 01/01/2012

 ABGC Detailed Content Outline *	Cognitive Level			Total
	Recall	Application	Analysis	
I. CASE PREPARATION & MEDICAL HISTORY	5	12	9	26
A. CASE PREPARATORY WORK	2	4	6	12
1. Evaluate referral information to determine <ol style="list-style-type: none"> a. Appropriateness b. Urgency c. Need for consultation with other experts d. Need to obtain additional information e. Need to include relevant family members in the evaluation f. Need to include interpreters 2. Review and evaluate medical records 3. Review of literature and other resources 4. Develop preliminary risk assessment and/or differential diagnosis 5. Identify, determine appropriateness of, and prepare for potential diagnostic and screening tests 6. Assess eligibility for, and impact of, insurance coverage 7. Seek input about or develop a preliminary care plan with the health care team				
B. MEDICAL HISTORY	3	8	3	14

<ol style="list-style-type: none"> 1. Elicit/Review general history <ol style="list-style-type: none"> a. Birth history b. Physical measurements c. Developmental history d. Health problems and age of onset e. Congenital anomalies/birth defects f. Hospitalizations and surgeries g. Current and past medications and exposures h. Reproductive history i. Review of systems 				
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ABGC Detailed Content Outline *

	Cognitive Level			Total
	Recall	Application	Analysis	
2. Elicit/Review history and test results relevant to reason for referral <ol style="list-style-type: none"> a. Cardiology b. Gastroenterology c. Metabolic d. Neurology e. Obstetrics/Gynecology f. Oncology g. Pediatrics 				
II. FAMILY HISTORY & RISK COUNSELING	8	13	13	34
A. PEDIGREE AND FAMILY HISTORY	4	6	0	10
1. Educate client about purpose for, and process of, family history 2. Elicit history and facilitate recall by tailoring questioning for the individual case 3. Establish roles of historians 4. Document ethnicity and consanguinity 5. Construct a complete pedigree using standardized pedigree nomenclature 6. Identify the following: <ol style="list-style-type: none"> a. Family dynamics b. Emotional responses c. Diagnoses requiring confirmation d. Referrals or evaluations needed to identify diagnoses 7. Educate client about importance of updating family history as changes occur over time				
B. RISK ASSESSMENT AND RISK COUNSELING	4	7	13	24
1. Analyze pedigree <ol style="list-style-type: none"> a. Assess etiology (e.g., hereditary, familial, sporadic, environmental) b. Determine mode of inheritance c. Identify ethnicity and consanguinity based risks 2. Integrate medical, laboratory, and genetic information				



ABGC Detailed Content Outline*

	Cognitive Level			Total
	Recall	Application	Analysis	
<ul style="list-style-type: none"> 3. Collaborate with healthcare team to modify assessment 4. Modify differential diagnosis 5. Select risk assessment model based on client data 6. Perform comprehensive risk assessment 7. Identify at-risk family members 8. Counsel clients about the following <ul style="list-style-type: none"> a. Genetic risks b. Risk modifiers c. Disease risks 				
III. TESTING & DIAGNOSIS	13	25	12	50
A. DIAGNOSIS AND NATURAL HISTORY	6	9	2	17
<ul style="list-style-type: none"> 1. Formulate agenda for discussion of diagnoses and natural history 2. Integrate natural history, characteristics, and symptoms of working diagnosis 3. Incorporate client specific findings and needs 4. Review management plan with healthcare team 5. Convey information about the following: <ul style="list-style-type: none"> a. Basic genetic concepts b. Diagnosis/indication c. Etiology/modes of inheritance d. Natural history & prognosis e. Variable expressivity & penetrance f. Options for prevention, treatment, reproduction, and management g. Follow-up medical plan 6. Tailor follow-up plan according to client circumstances 				
B. TESTING OPTIONS	4	10	4	18
<ul style="list-style-type: none"> 1. Identify most informative persons for testing 2. Identify and select most appropriate test(s) 				



ABGC Detailed Content Outline*

	Cognitive Level			Total
	Recall	Application	Analysis	
3. Explain testing options (pre- and post-natal) <ul style="list-style-type: none"> a. Diagnostic b. Screening c. Predictive d. Carrier e. Research 4. Facilitate decision making and informed consent <ul style="list-style-type: none"> a. Explain possible testing outcomes and implications b. Discuss possible financial and insurance implications of testing c. Discuss technical limitations of testing d. Discuss potential risks and benefits of testing e. Discuss alternatives to genetic testing f. Help client anticipate the range of emotional effects client and/or family members may experience 5. Facilitate genetic testing <ul style="list-style-type: none"> a. Select laboratory for testing b. Discuss test with laboratory c. Identify specimens for testing 				
C. TEST RESULTS AND DISCUSSION	3	6	6	15
1. Evaluate clinical significance of test results depending on situational variables (e.g., methodology, clinical context, family history, paternity) and literature/resources <ul style="list-style-type: none"> 2. Discuss results to include <ul style="list-style-type: none"> a. Sensitivity and specificity b. Implications of positive, negative, and ambiguous results 3. Discuss recommendations for additional testing 				
IV. COMMUNICATION & PSYCHOSOCIAL COUNSELING	9	20	10	39
A. COMMUNICATION	2	4	4	10
1. Evaluate client understanding and response <ul style="list-style-type: none"> 2. Address client misconceptions 				



ABGC Detailed Content Outline *

	Cognitive Level			Total
	Recall	Application	Analysis	
<ul style="list-style-type: none"> 3. Modify interaction based on client's understanding and response 4. Adjust practices to accommodate telephone counseling or telemedicine 5. Ensure appropriate written and oral communication of relevant case components to patients, families, healthcare providers, insurers, and laboratories 				
B. CONTRACTING	1	4	2	7
<ul style="list-style-type: none"> 1. Establish rapport through verbal and non-verbal interaction or through interpreters 2. Establish a mutually agreed upon genetic counseling agenda with the client 3. Elicit client concerns, expectations, and perceptions and modify as needed 4. Determine knowledge base of client 5. Assess client's ethno-cultural background, traditions, health beliefs, attitudes, lifestyles, and values 6. Outline the genetic evaluation process 7. Address anxiety for concerns articulated by the client including those <ul style="list-style-type: none"> a. precipitated by the referral b. external to the consultation 				
C. PSYCHOSOCIAL ASSESSMENT	3	6	2	11
<ul style="list-style-type: none"> 1. Recognize factors that may affect the counseling interaction 2. Assess client and/or family <ul style="list-style-type: none"> a. Emotions and well-being b. Support systems and barriers c. Defense mechanisms and coping strategies d. Cultural/Religious beliefs and values 3. Evaluate social and psychological histories 4. Assess clients' psychosocial needs and recognize need for referral 				



ABGC Detailed Content Outline *

	Cognitive Level			Total
	Recall	Application	Analysis	
D. PSYCHOSOCIAL SUPPORT/COUNSELING	3	6	2	11
1. Address client emotions and/or behavior using: <ol style="list-style-type: none"> a. Empathic responses (e.g., paraphrasing, summarizing, reflecting) b. Direct statements c. Questions d. Reframing 2. Employ anticipatory guidance 3. Utilize cross-cultural genetic counseling techniques 4. Promote competence and autonomy 5. Address family communication issues 6. Facilitate client decision making 7. Promote coping and adjustment 8. Modify interaction as needed for telephone counseling or telemedicine 9. Identify and respond to boundaries of client/professional relationship				
V. RESOURCES / ETHICS / RESEARCH / EDUCATION	5	12	4	21
A. RESOURCES AND FOLLOW-UP	1	2	1	4
1. Advocate for clients in medical and non-medical settings 2. Assess client's need for follow-up services 3. Evaluate resources and services <ol style="list-style-type: none"> a. Support groups b. Community agencies c. Other medical experts d. Client education materials 4. Refer to other professionals and agencies				
B. ETHICAL/LEGAL	2	4	1	7
1. Comply with privacy and confidentiality regulations regarding personal health information 2. Inform clients of potential limitations to maintaining privacy and confidentiality of genetic information				

 ABGC Detailed Content Outline *	Cognitive Level			Total
	Recall	Application	Analysis	
3. Adhere to the medical and legal requirements of case documentation 4. Discuss real and potential discrimination risks 5. Employ ethical frameworks to address clinical dilemmas 6. Seek consultation with ethical/legal experts 7. Comply with National Society of Genetic Counselors Code of Ethics 8. Practice in accordance with published position statements and practice guidelines 9. Practice in accordance with institution-specific guidelines				
C. RESEARCH	1	3	1	5
1. Comply with federal regulations for protection of human subjects in research 2. Enroll subjects in research studies 3. Serve as liaison for client participation in research studies 4. Translate research findings to clinical arena				
D. EDUCATION/POLICY	1	3	1	5
1. Provide education to <ul style="list-style-type: none"> a. Genetic counseling students b. Genetic counselors c. Other healthcare students and professionals d. Industry representatives e. Public 2. Provide training and supervision 3. Participate in professional development 4. Develop educational materials				
Totals	40	82	48	170

* Each ABGC examination will have 30 pretest items perform.

III. ACGC Practice-based Competencies



ACGC

Accreditation Council
for Genetic Counseling

Fostering excellence in education for the future of genetic counseling

Practice-Based Competencies for Genetic Counselors

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Practice-Based Competencies for Genetic Counselors

This document defines and describes the twenty two practice-based competencies that an entry-level provider must demonstrate to successfully practice as a genetic counselor. It provides guidance for the training of genetic counselors and an assessment for maintenance of competency of practicing genetic counselors. The didactic and experiential components of a genetic counseling training curriculum and maintenance of competency for providers must support the development of competencies categorized in the following domains: **(I) Genetics Expertise and Analysis; (II) Interpersonal, Psychosocial and Counseling Skills; (III) Education; and (IV) Professional Development & Practice.** These domains describe the minimal skill set of a genetic counselor, which should be applied across practice settings. Some competencies may be relevant to more than one domain. *Italicized words are defined in the glossary.*

Domain I: Genetics Expertise and Analysis

1. Demonstrate and utilize a depth and breadth of understanding and knowledge of *genetics* and *genomics* core concepts and principles.
2. Integrate knowledge of psychosocial aspects of conditions with a genetic component to promote *client* well-being.
3. Construct relevant, targeted and comprehensive personal and family histories and pedigrees.
4. Identify, assess, facilitate, and integrate genetic testing options in genetic counseling practice.
5. Assess individuals' and their relatives' *probability of conditions with a genetic component* or carrier status based on their pedigree, test result(s), and other pertinent information.
6. Demonstrate the skills necessary to successfully manage a genetic counseling case.
7. Critically assess genetic/genomic, medical and social science literature and information.

Domain II: Interpersonal, Psychosocial and Counseling Skills

8. Establish a mutually agreed upon genetic counseling agenda with the client.
9. Employ active listening and interviewing skills to identify, assess, and empathically respond to stated and emerging concerns.
10. Use a range of genetic counseling skills and models to facilitate informed decision-making and adaptation to genetic risks or conditions.
11. Promote client-centered, informed, non-coercive and value-based decision-making.

12. Understand how to adapt genetic counseling skills for varied service delivery models.

13. Apply genetic counseling skills in a culturally responsive and respectful manner to all clients.

Domain III: Education

14. Effectively educate clients about a wide range of genetics and genomics information based on their needs, their characteristics and the circumstances of the encounter.

15. Write concise and understandable clinical and scientific information for audiences of varying educational backgrounds.

16. Effectively give a presentation on genetics, genomics and genetic counseling issues.

Domain IV: Professional Development & Practice

17. Act in accordance with the ethical, legal and philosophical principles and values of the genetic counseling profession and the policies of one's institution or organization.

18. Demonstrate understanding of the research process.

19. Advocate for individuals, families, *communities* and the genetic counseling profession.

20. Demonstrate a self-reflective, evidenced-based and current approach to genetic counseling practice.

21. Understand the methods, roles and responsibilities of the process of clinical supervision of trainees.

22. Establish and maintain professional *interdisciplinary relationships* in both team and one-on-one settings, and recognize one's role in the larger healthcare system.

Appendix: Samples of Activities and Skills that may assist in Meeting Practice-Based Competencies

These samples may assist in curriculum planning, development, implementation and program and counselor evaluation. They are not intended to be exhaustive nor mandatory, as competencies can be achieved in multiple ways.

Domain I: Genetics Expertise and Analysis

1. Demonstrate and utilize a depth and breadth of understanding and knowledge of genetics and genomics core concepts and principles.

- a) Demonstrate knowledge of principles of human, medical, and public health genetics and genomics and their related sciences. These include:
 - Mendelian and non-Mendelian inheritance
 - Population and quantitative genetics
 - Human variation and disease susceptibility
 - *Family history* and *pedigree* analysis
 - Normal/abnormal physical & psychological development
 - Human reproduction
 - Prenatal genetics
 - Pediatric genetics
 - Adult genetics
 - Personalized genomic medicine
 - Cytogenetics
 - Biochemical genetics
 - Molecular genetics
 - Embryology/Teratology/Developmental genetics
 - Cancer genetics
 - Cardiovascular genetics
 - Neurogenetics
 - Pharmacogenetics
 - Psychiatric genetics
- b) Apply knowledge of genetic principles and understand how they contribute to etiology, clinical features and disease expression, natural history, differential diagnoses, genetic testing and test report interpretation, pathophysiology, recurrence risk, management and prevention, and *population screening*.

2. Integrate knowledge of psychosocial aspects of conditions with a genetic component to promote client well-being.

- a) Demonstrate an understanding of psychosocial, ethical, and legal issues related to genetic counseling encounters.

- b) Describe common emotional and/or behavioral responses that may commonly occur in the genetic counseling context.
- c) Recognize the importance of understanding the lived experiences of people with various genetic/genomic conditions.
- d) Evaluate the potential impact of psychosocial issues on client decision-making and adherence to medical management.

3. Construct relevant, targeted and comprehensive personal and family histories and pedigrees.

- a) Demonstrate proficiency in the use of pedigree symbols, standard notation, and nomenclature.
- b) Utilize interviewing skills to elicit a family history and pursue a relevant path of inquiry.
- c) Use active listening skills to formulate structured questions for the individual case depending on the reason for taking the family history and/or potential diagnoses.
- d) Elicit and assess pertinent information relating to medical, developmental, pregnancy and psychosocial histories.
- e) Extract pertinent information from available medical records.

4. Identify, assess, facilitate, and integrate genetic testing options in genetic counseling practice.

- a) Investigate the availability, analytic validity, clinical validity, and clinical utility of screening, diagnostic and predictive genetic/genomic tests.
- b) Evaluate and assess laboratories and select the most appropriate laboratory and test based on the clinical situation.
- c) Identify and discuss the potential benefits, risks, limitations and costs of genetic testing.

- d) Coordinate and facilitate the ordering of appropriate genetic testing for the client.
- e) Interpret the clinical implications of genetic test reports.
- f) Recognize and differentiate specific considerations relevant to genetic versus genomic and clinical versus research testing in terms of the informed consent process, results disclosure, institutional review board (IRB) guidelines, and clinical decision-making.

5. Assess individuals' and their relatives' probability of conditions with a genetic component or carrier status based on their pedigree, test result(s), and other pertinent information.

- a) Assess probability of conditions with a genetic component or carrier status using relevant knowledge and data based on pedigree analysis, inheritance patterns, genetic epidemiology, quantitative genetics principles, and mathematical calculations.
- b) Incorporate the results of screening, diagnostic and predictive genetic/genomic tests to provide accurate risk assessment for clients.
- c) Evaluate familial implications of genetic/genomic test results.
- d) Identify and integrate relevant information about environmental and lifestyle factors into the risk assessment.

6. Demonstrate the skills necessary to successfully manage a genetic counseling case.

- a) Develop and execute a *case management* plan that includes case preparation and follow-up.

- b) Assess and modify the case management plan as needed to incorporate changes in management and surveillance recommendations.
- c) Document and present the genetic counseling encounter information clearly and concisely, orally and in writing, in a manner that is understandable to the audience and in accordance with professional and institutional guidelines and standards.
- d) Identify and introduce research options when indicated and requested in compliance with applicable privacy, human subjects, regional and institutional standards.
- e) Identify, access and present information to clients on local, regional, national and international resources, services and support.

7. Critically assess genetic/genomic, medical and social science literature and information.

- a) Plan and execute a thorough search and review of the literature.
- b) Evaluate and critique scientific papers and identify appropriate conclusions by applying knowledge of relevant *research methodologies* and statistical analyses.
- c) Synthesize information obtained from a literature review to utilize in genetic counseling encounters.
- d) Incorporate medical and scientific literature into evidenced-based practice recognizing that there are limitations and gaps in knowledge and data.

Domain II: Interpersonal, Psychosocial and Counseling Skills

8. Establish a mutually agreed upon genetic counseling agenda with the client.

- a) Describe the genetic counseling process to clients.
- b) Elicit client expectations, perceptions, knowledge, and concerns regarding the genetic counseling encounter and the reason for referral or contact.

- c) Apply client expectations, perceptions, knowledge and concerns towards the development of a mutually agreed upon agenda.
- d) Modify the genetic counseling agenda, as appropriate by continually *contracting* to address emerging concerns.

9. Employ active listening and interviewing skills to identify, assess, and empathically respond to stated and emerging concerns.

- a) Elicit and evaluate client emotions, individual and family experiences, beliefs, behaviors, values, coping mechanisms and adaptive capabilities.
- b) Engage in relationship-building with the client by establishing rapport, employing active listening skills and demonstrating empathy.
- c) Assess and respond to client emotional and behavioral cues, expressed both verbally and non-verbally, including emotions affecting understanding, retention, perception, and decision-making.

10. Use a range of genetic counseling skills and models to facilitate informed decision-making and adaptation to genetic risks or conditions.

- a) Demonstrate knowledge of psychological defenses, family dynamics, family systems theory, coping models, the grief process, and reactions to illness.
- b) Utilize a range of basic counseling skills, such as open-ended questions, reflection, and normalization.
- c) Employ a variety of advanced genetic counseling skills, such as anticipatory guidance and in-depth exploration of client responses to risks and options.
- d) Assess clients' psychosocial needs, and evaluate the need for intervention and referral.
- e) Apply evidence-based models to guide genetic counseling practice, such as short-term *client-centered* counseling, grief counseling and crisis counseling.
- f) Develop an appropriate follow-up plan to address psychosocial concerns that have emerged in the encounter, including referrals for psychological services when indicated.

11. Promote client-centered, informed, non-coercive and value-based decision-making.

- a) Recognize one's own values and biases as they relate to genetic counseling.
- b) Actively facilitate client decision-making that is consistent with the client's values.

- c) Recognize and respond to client-counselor relationship dynamics, such as transference and countertransference, which may affect the genetic counseling interaction.
- d) Describe the continuum of non-directiveness to directiveness, and effectively utilize an appropriate degree of guidance for specific genetic counseling encounters.
- e) Maintain professional boundaries by ensuring directive statements, self-disclosure, and self-involving responses are in the best interest of the client.

12. Understand how to adapt genetic counseling skills for varied service delivery models.

- a) Tailor communication to a range of service delivery models to meet the needs of various audiences.
- b) Compare strengths and limitations of different service delivery models given the genetic counseling indication.
- c) Describe the benefits and limitations of *distance encounters*.
- d) Tailor genetic counseling to a range of service delivery models using relevant verbal and non-verbal forms of communication.
- e) Recognize psychosocial concerns unique to distance genetic counseling encounters.

13. Apply genetic counseling skills in a culturally responsive and respectful manner to all clients.

- a) Describe how aspects of culture including language, ethnicity, life-style, socioeconomic status, disability, sexuality, age and gender affect the genetic counseling encounter.
- b) Assess and respond to client cultural beliefs relevant to the genetic counseling encounter.
- c) Utilize multicultural genetic counseling resources to plan and tailor genetic counseling agendas, and assess and counsel clients.
- d) Identify how the genetic counselor's personal cultural characteristics and biases may impact encounters and use this knowledge to maintain effective client-focused services.

Domain III: Education

14. Effectively educate clients about a wide range of genetics and genomics information based on their needs, their characteristics and the circumstances of the encounter.

- a) Identify factors that affect the learning process such as intellectual ability, emotional state, socioeconomic factors, physical abilities, religious and cultural beliefs, motivation, language and educational background.
- b) Recognize and apply risk communication principles and theory to maximize client understanding.
- c) Communicate relevant genetic and genomic information to help clients understand and adapt to conditions or the risk of conditions and to engage in informed decision-making.
- d) Utilize a range of tools to enhance the learning encounter such as handouts, visual aids, and other educational technologies.
- e) Communicate both orally and in writing using a style and method that is clear and unambiguous.
- f) Present balanced descriptions of lived experiences of people with various conditions.
- g) Explain and address client concerns regarding genetic privacy and related protections.
- h) Employ strategies for successful communication when working with interpreters.

15. Write concise and understandable clinical and scientific information for audiences of varying educational backgrounds.

- a) Develop written educational materials tailored to the intended audience.
- b) Recognize the professional and legal importance of medical documentation and confidentiality.
- c) Assess the challenges faced by clients with low literacy and modify the presentation of information to reduce the literacy burden.

16. Effectively give a presentation on genetics, genomics and genetic counseling issues.

- a) Assess and determine the educational goals and learning objectives based on the needs and characteristics of the audience.
- b) Develop an educational method or approach that best facilitates the educational goals of the presentation and considers the characteristics of the audience.
- c) Present using a delivery style that results in effective communication to the intended audience that is clear and unambiguous.
- d) Assess one's own teaching style and use feedback and other outcome data to refine future educational encounters.

Domain IV: Professional Development & Practice

17. Act in accordance with the ethical, legal and philosophical principles and values of the genetic counseling profession and the policies of one's institution or organization.

- a) Follow the guidance of the National Society of Genetic Counselors Code of Ethics.
- b) Recognize and respond to ethical and moral dilemmas arising in genetic counseling practice and seek outside consultation when needed.
- c) Identify and utilize factors that promote client autonomy.
- d) Ascertain and comply with current professional credentialing requirements, at the institutional, state, regional and national level.

- e) Recognize and acknowledge situations that may result in a real or perceived conflict of interest.

18. Demonstrate understanding of the research process.

- a) Articulate the value of research to enhance the practice of genetic counseling.
- b) Demonstrate an ability to formulate a research question.
- c) Recognize the various roles a genetic counselor can play on a research team and identify opportunities to participate in and/or lead research studies.
- d) Identify available research-related resources.

Practice-Based Competencies for Genetic Counselors

- e) Apply knowledge of research methodology and *study design* to critically evaluate research outcomes.
- f) Apply knowledge of research methodology and study designs to educate clients about research studies relevant to them/their family.
- g) Describe the importance of human subjects' protection and the role of the Institutional Review Board (IRB) process.

19. Advocate for individuals, families, communities and the genetic counseling profession.

- a) Recognize the potential tension between the values of clients, families, communities and the genetic counseling profession.
- b) Support client and community interests in accessing, or declining, social and health services and clinical research.
- c) Identify genetic professional organizations and describe opportunities for participation and leadership.
- d) Employ strategies that to increase/promote access to genetic counseling services.

20. Demonstrate a self-reflective, evidenced-based and current approach to genetic counseling practice.

- a) Display initiative for lifelong learning.
- b) Recognize one's limitations and capabilities in the context of genetic counseling practice.
- c) Seek feedback and respond appropriately to performance critique.
- d) Demonstrate a scholarly approach to genetic counseling, including using available evidence-based principles in the preparation and execution of a genetic counseling encounter.
- e) Identify appropriate individual and/or group opportunities for ongoing personal supervision and mentorship.
- f) Accept responsibility for one's physical and emotional health as it impacts on professional performance.
- g) Recognize and respect professional boundaries between clients, colleagues, and supervisors.

21. Understand the methods, roles and responsibilities of the process of clinical supervision of trainees.

- a) Engage in active reflection of one's own clinical supervision experiences.
- b) Identify resources to acquire skills to appropriately supervise trainees.
- c) Demonstrate understanding of the dynamics and responsibilities of the supervisor/supervisee relationship.

22. Establish and maintain professional *inter-disciplinary relationships* in both team and one-on-one settings, and recognize one's role in the larger healthcare system.

- a) Distinguish the genetic counseling *scope of practice* in relation to the roles of other health professionals.
- b) Develop positive relationships with professionals across different disciplines.
- c) Demonstrate familiarity with the *health care system* as it relates to genetic counseling practice including relevant privacy regulations, referral and payment systems.
- d) Demonstrate effective interaction with other professionals within the healthcare infrastructure to promote appropriate and equitable delivery of genetic services.
- e) Assist non-genetic healthcare providers in utilizing genetic information to improve patient care in a cost-effective manner.
- f) Promote responsible use of genetic/genomic technologies and information to enhance the health of individuals, communities, and the public.

Glossary

Case management: The planning and coordination of health care services appropriate to achieve a desired medical and/or psychological outcome. In the context of genetic counseling, case management requires the evaluation of a medical condition and/or risk of a medical condition in the client or family, evaluating psychological needs, developing and implementing a plan of care, coordinating medical resources and advocating for the client, communicating healthcare needs to the individual, monitoring an individual's progress and promoting client-centered decision making and cost-effective care.

Client centered: A non-directive form of talk therapy that was developed by Carl Rogers during the 1940's and 1950's. The goal of client-centered counseling is to provide clients with an opportunity to realize how their attitudes, feelings and behavior are being negatively affected and to make an effort to find their true positive potential. The counselor is expected to employ genuineness, empathy, and unconditional positive regard, with the aim of clients finding their own. (This is also known as person-centered or Rogerian therapy.)

Client: Anyone seeking the expertise of a genetic counselor. Clients include anyone seeking the expertise of a genetic counselor such as individuals seeking personal health information, risk assessment, genetic counseling, testing and case management; health care professionals; research subjects; and the public.

Contracting: The two-way communication process between the genetic counselor and the patient/client which aims to clarify both parties' expectations and goals for the session.

Distance Encounters: At present, and even more so in the future, clinical genetic services will be provided to patients/clients by providers who are not physically in the same location as the patient/client. These encounters can be called Distance Encounters, even if the provider and patient are not physically located at great distances from each other. Ways in which this care can be provided include interactive two-way video sessions in real time; asynchronous virtual consultations by store-and-forward digital transmission of patient images, data, and

clinical questions from the patient/client's healthcare provider to the genetic services provider; telephone consultation between genetic provider and patient/client; and perhaps additional forms of interaction between providers and patients/clients unimagined at present.

Family history: The systematic research and narrative of past and current events relating to a specific family that often include medical and social information.

Genetics: The branch of biologic science which investigates and describes the molecular structure and function of genes, how gene function produces effects in the organism (phenotype), how genes are transmitted from parent to offspring, and the distribution of gene variations in populations.

Genetic counseling: The process of helping people understand and adapt to the medical, psychological and familial implications of genetic contributions to disease. Genetic counselors work in various settings and provide services to diverse clients.

Genomics: The branch of biology which studies the aggregate of genes in an organism. The main difference between genomics and genetics is that genetics generally studies the structure, variation, function, and expression of single genes, whereas genomics studies the large number of genes in an organism and their interrelationship.

Health care system: The organization of people, institutions, and resources to deliver health care services to meet the health needs of target populations. The laws, regulations and policies governing healthcare systems differ depending on the country, state/province, and institution.

Interdisciplinary relationships: Connections and interactions among members of a team of health care staff from different areas of practice.

Pedigree: A diagram of family relationships that uses symbols to represent people and lines to represent relationships. These diagrams make it easier to visualize relationships within families, particularly large extended families.

Population screening: Testing of individuals in an identified, asymptomatic, target population who may be at risk for a particular disease or may be at risk to have a child with a particular disease. Population screening may allow for the provision of information important for decision-making, early diagnosis, and improved treatment or disease prevention.

Probability of conditions with a genetic component: The chance, typically expressed as a fraction or a percentage, for an individual or a specific population to experience a condition that has a genetic component. This terminology is used intentionally rather than “genetic risk” because the concept of “risk” is not synonymous with “probability.” The origin of a probability can come from principles of Mendelian inheritance or from epidemiology. The probability of genetic disease is differentiated from risk of genetic disease in that probability conveys the numerical estimate for an individual patient or a specific population while risk includes additional elements including the burden of disease.

Population Genetics: The study of allele frequency distribution and change under evolutionary processes, and includes concepts such as the Hardy-Weinberg principle and the study of quantitative genetic traits.

Research methodologies: The process to define the activity (how, when, where, etc.) of gathering data.

Scope of practice: Genetic Counselors work as members of a health care team in a medical genetics program or other specialty/subspecialty; including oncology, neurology, cardiology, obstetrics and gynecology, among others. They are uniquely trained to provide information, counseling and support to individuals and families whose members have genetic disorders or who may be at risk for these conditions. The genetic counseling scope of practice is carried out through collaborative

relationships with clinical geneticists and other physicians, as well as other allied healthcare professionals such as nurses, physicians and social workers.

Study design: The formulation of trials and experiments in medical and epidemiological research. Study designs can be qualitative, quantitative, descriptive (e.g., case report, case series, survey), analytic-observational (e.g., cross sectional, case-control, cohort), and/or analytic-experimental (randomized controlled trials).

IV. List of Resources for Developing Effective Teaching/Adult-learning Models

Association of American Medical Colleges. (2007). [Effective use of educational technology in medical education. Colloquium on educational technology: Recommendations and guidelines for medical educators.](#) Association of American Medical Colleges (AAMC) Institute for Improving Medical Education.

Cervero, R.M., & Gaines, J.K. (2014). [Effectiveness of continuing medical education: An updated synthesis of systematic reviews.](#) Accreditation Council for Continuing Medical Education Accreditation (ACCME).

Davis, D., & Davis, N. (2010). [Selecting educational interventions for knowledge translation.](#) *CMAJ*, 182(2), E89-93.

Dong, C., & Goh, P. S. (2015). [Twelve tips for the effective use of videos in medical education.](#) *Med Teach*, 37(2), 140-145.

Forsetlund, L., Bjorndal, A., Rashidian, A., Jamtvedt, G., O'Brien, M. A., Wolf, F. M., . . . Oxman, A. D. (2009). [Continuing education meetings and workshops for health professionals.](#) Cochrane Database of Systematic Reviews.

Morrison, G.R., Ross, S.M., Howard, K.K., & Kemp, J.E. (2012). *Designing effective instruction* (7th ed.): Wiley.

Piskurich, G.M. (2006). *Rapid instructional design: Learning ID right and fast* (2nd ed.). San Fransisco, CA: Pfeiffer.

Steinert, Y., & Snell, L.S. (1999). [Interactive lecturing: strategies for increasing participation in large group presentations.](#) *Med Teach*, 21(1), 37-42.

Teaching Excellence in Adult Literacy. (2011). [Teal Center Factsheet No. 11: Adult Learning Theories.](#)

Yavner, S. D., Pusic, M. V., Kalet, A. L., Song, H. S., Hopkins, M. A., Nick, M. W., & Ellaway, R. H. (2015). [Twelve tips for improving the effectiveness of web-based multimedia instruction for clinical learners.](#) *Med Teach*, 37(3), 239-244.

V. Example of Appropriate Behavioral Verbs for Learning Objectives:

Remembering Verbs	Understanding Verbs	Applying Verbs	Analyzing Verbs	Evaluating Verbs	Creating Verbs
Define	Classify	Apply	Compare	Argue	Construct
Identity	Indicate	Examine	Contrast	Critique	Design
List	Match	Generalize	Differentiate	Defend	Formulate
State	Select	Illustrate	Discriminate	Evaluate	Hypothesize
Reproduce	Summarize	Record	Examine	Judge	Plan

VI. Program Evaluation and Learning Assessment Template

Sample Self-Assessment and Evaluation Form

Part 1: Participant Self- Assessment of Learning and Evaluation of Content and Presenter(s)/Instructor(s)

This set of questions can be repeated for each session in a program

Self-Assessment: I achieved the following learning objectives from this program/session:	Strongly Disagree	Disagree	Agree	Strongly Agree
Objective 1 ((write out specific objective)	1	2	3	4
Objective 2 (write out specific objective)	1	2	3	4
Objective 3 etc. (write out specific objective)	1	2	3	4
Learning Assessment:	Very Little	Little	A Good Bit	A Great Deal
How much did you learn as a result of this program/ session	1	2	3	4
Evaluation of content and instruction:	Strongly Disagree	Disagree	Agree	Strongly Agree
The content was appropriate for post-graduate level training/ instruction	1	2	3	4
The instruction was at a level appropriate to post-graduate level training/ instruction	1	2	3	4
The content was relevant to genetic counseling practice (i.e. reflects practice-based competencies and/or practice analysis)	1	2	3	4
The content was consistent with genetic counseling Code of Ethics	1	2	3	4
Teaching methods were effective	1	2	3	4
Visual aids, handouts, and oral presentations clarified content	1	2	3	4

Evaluation of Instructor (s)/presenter(s) [Repeat questions for each instructor/presenter in the session]	Strongly Disagree	Disagree	Agree	Strongly Agree
Instructor 1:				
Knew the subject matter	1	2	3	4
Presented content effectively	1	2	3	4
Elaborated on stated objectives	1	2	3	4
Maintained my interest	1	2	3	4
Was responsive to questions, comments, opinions	1	2	3	4
Presented content without any bias of any commercial product	1	2	3	4
Disclosed any conflict of interest or lack of a conflict of interest at the start of the session.	1	2	3	4

Part 2: Program Evaluation

These are examples of the types of questions that program planners could include in an overall program evaluation. They may be modified as needed.

Program Content	Strongly Disagree	Disagree	Agree	Strongly Agree
The content presented in this program can be applied to my practice or other work context.	1	2	3	4
The content contributes to achieving my personal or professional goals.	1	2	3	4
The program enhanced my professional expertise.	1	2	3	4
Teaching methods or tools focused on how to apply program content to my practice/ work environment.	1	2	3	4
Learning was enhanced through a variety of media utilizing auditory, visual, and multimedia formats.	1	2	3	4
The presentation facilitated the integration and synthesis of information.	1	2	3	4
	Not Useful	A Little Useful	Very Useful	Extremely Useful
How useful was the content of this program for your practice or other professional development?	1	2	3	4
Venue, Setting, etc.	Strongly Disagree	Disagree	Agree	Strongly Agree
Facility was adequate for my needs	1	2	3	4
Special needs were met	1	2	3	4
Facility was comfortable and accessible	1	2	3	4
Food and beverage were adequate (if applicable)	1	2	3	4
Program brochure was informative and accurate	1	2	3	4

The following questions can be edited as appropriate to the program

Professional & Ethical Issues		
Prior to registration, the following were may clearly evident:	Yes	No
Requirements for successful completion of activity		

Commercial support for the program, sponsor or instructor		
Commercial support for the content of instruction (e.g. research grants funding research findings, etc.) that could be construed as a conflict of interest		
Commercial support or benefit for endorsement of products (e.g. books, training, etc.)		