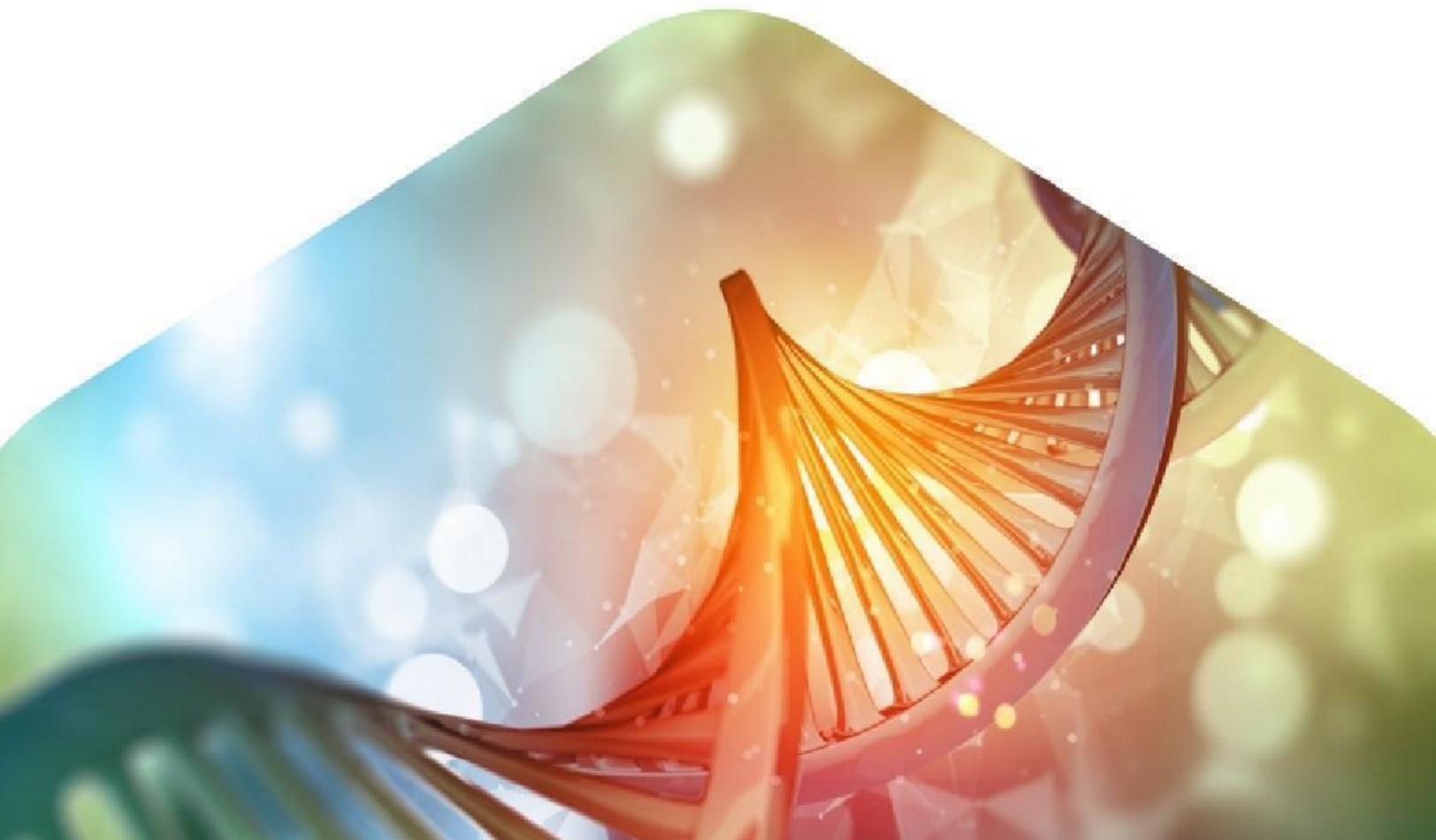




Canadian Association of Genetic Counsellors
Executive Summary



Facts About Genetic Counsellors

Did you know...?

- ✓ Genetic counsellors work in a variety of settings, including but not limited to university medical centres, private and public hospitals/medical facilities, diagnostic laboratories, health maintenance organizations, not-for-profit organizations, and government organizations and agencies.
- ✓ Genetic counsellors work in multiple areas of practice, including pediatrics, prenatal, cancer, metabolic disease, neurology, cardiology, infertility, pharmacogenetics, genomic medicine, and others.
- ✓ Increasing demands for genetic expertise in varied fields provides genetic counsellors new ways of using their training in genetic counselling. These include working in administration, basic and behavioural research, public and professional education, educational content development and editing, public health, private industry, laboratory support, public policy, public relations and consulting.
- ✓ The average salary for a full-time genetic counsellor is \$98,209 CAD¹ but can exceed \$250,000 CAD, depending on specialty area, training, and experience.
- ✓ Ninety-six percent of genetic counsellors have a Master's degree in human genetics or genetic counselling.
- ✓ Eight out of ten genetic counsellors (83%) report being satisfied with the profession.
- ✓ The Canadian Association of Genetic Counsellors (CAGC), founded in 1987, promotes high standards of practice, facilitating and supporting professional growth and increasing public awareness of the genetic counselling profession in Canada.
- ✓ The Canadian Board of Genetic Counselling (CBGC) and American Board of Genetic Counseling (ABGC) are not-for-profit organizations that certify and recertify genetic counsellors in North America.
- ✓ The Accreditation Council for Genetic Counseling (ACGC) accredits genetic counselling training programs. As of April 2022, there are 56 accredited training programs in the U.S. and Canada².

¹ Data from the 2022 PSS. Statistical outliers (extremely high and low salaries) were removed before analyses were performed using an Interquartile Range Rule of 3.

² <https://www.gceducation.org/>.

About the Survey

The Canadian Association of Genetic Counsellors (CAGC) administers a Professional Status Survey (PSS) to its members in partnership and collaboration with the NSGC for the development and administration of the PSS. The goal is to better capture genetic counselling profession data in a comprehensive fashion, reduce the need for Canadian genetic counsellors to respond to multiple surveys and increase the overall response rate to both workforce surveys. A CAGC PSS Representative serves on the NSGC PSS Subcommittee to ensure survey development is aligned with CAGC nuances/healthcare practices in Canada.

This analysis is a supplement to the Professional Status Survey (PSS) administered in late 2021 to members of the National Society of Genetic Counselors (NSGC) and is specific to respondents who live or work in Canada with an additional section dedicated to Canadian citizens who live and work in the U.S.

Of the 2,859 respondents to the 2022 PSS, 248 reside in Canada. Among those, 233 (94%) also work in Canada, and the rest work in the U.S. The majority of those who reside in Canada are Canadian citizens (98%). There were 84 genetic counsellors who live and work in the U.S. who are also citizens of Canada. Unless otherwise noted, we show information for the genetic counsellors who are residents of Canada and/or work in Canada, regardless of citizenship.

Unless otherwise noted, this report shows information for the genetic counsellors who are residents of Canada and/or work in Canada, regardless of citizenship.

The 2022 PSS

The PSS was administered from January 3, 2022 through February 28, 2022 to eligible genetic counsellors who are either Full, Emeritus, or New Members of the NSGC, Full or Emeritus members of the Canadian Association of Genetic Counsellors (CAGC), and/or diplomates of the American Board of Genetic Counseling (ABGC) and Canadian Board of Genetic Counselling (CBGC). The 2022 PSS survey collected data about the genetic counselling profession from January 1, 2021 to December 31, 2021.

A total of 2,859 completed surveys were received from the 6,346 solicited from the three organizations, resulting in a 45% response rate³. This demonstrates the widespread interest in sharing professional information, and also reflects the commitment genetic counsellors have to their profession. Of the 2,859 total respondents, 2,253 genetic counsellors (79%) shared their salary information⁴. Of the 251 genetic counsellors who live and/or work in Canada, 83 (33%)⁵ provided salary information.

³ Most recent PSS response rates: 2021 PSS respondents 55%, 2020 PSS respondents 50%, 2019 PSS respondents 49%, 2018 PSS respondents 53%.

⁴ 83% of 2018 PSS respondents, 85% of 2019 PSS respondents, 82% of 2020 PSS respondents, and 82% of the 2021 PSS respondents shared their salary information.

⁵ This compares to 79% of PSS 2022 respondents (includes U.S. participants) who shared salary information.

Canadian Respondents

Among the survey respondents were genetic counsellors who work in Canada—702 were invited to take the survey and 251 Canadian residents provided information, for a 36% response rate⁶. Canadian genetic counsellors represent a growing share of respondents to the PSS: 5% in the 2016 PSS, 7% in 2018 PSS , 9% in the 2020 PSS and 9% in the 2022 PSS.



Demographics Data

Ethnic and racial demographic data, and information about sexual orientation, gender identity (SOGI) and disability status have been collected through the PSS over the years, with the definitions and scope of data collected continually evolving. To date, these data have been analyzed and reported in a limited capacity, yielding descriptive statistics only. Committed to addressing issues of diversity, equity, inclusion and justice (D.E.I.J.), in 2022 the PSS subcommittee moved to allow enhanced analysis of member demographics. This enhanced analysis illuminates disparities; allows the NSGC and CAGC organizations to use this data for DEIJ initiatives, procedures, and guidelines; and enables special reports to its membership. This year, a Demographics Workgroup was also convened to review PSS questions related to member demographics to assure their inclusivity, appropriateness, and accuracy.

⁶ This compares to a 45% response rate for the full PSS 2022 that also includes U.S. genetic counsellors.

Demographics

Among the 251 respondents to the PSS who live or work in Canada, 95% identify as women, 4% identify as men, and the remaining 1% identify as agender, non-binary or questioning. New to the 2022 PSS is a question that asks sex assigned at birth. In this survey, sex assigned at birth correlated with gender identity in most cases, with 96% of respondents reporting female and 4% reporting male.

Eighty-seven percent identify as straight, 4% bisexual, 3% queer, 1% gay, 1% asexual, 1% pansexual or questioning, 1% self-described, and 2% did not answer the question.

The options for race/ethnicity were expanded for the 2022 PSS to better reflect the diversity of the genetic counselling community. New to the 2022 PSS is a breakdown of each race/ethnicity. Respondents could choose multiple subtypes among multiple races/ethnicities. See full report for results and additional details.

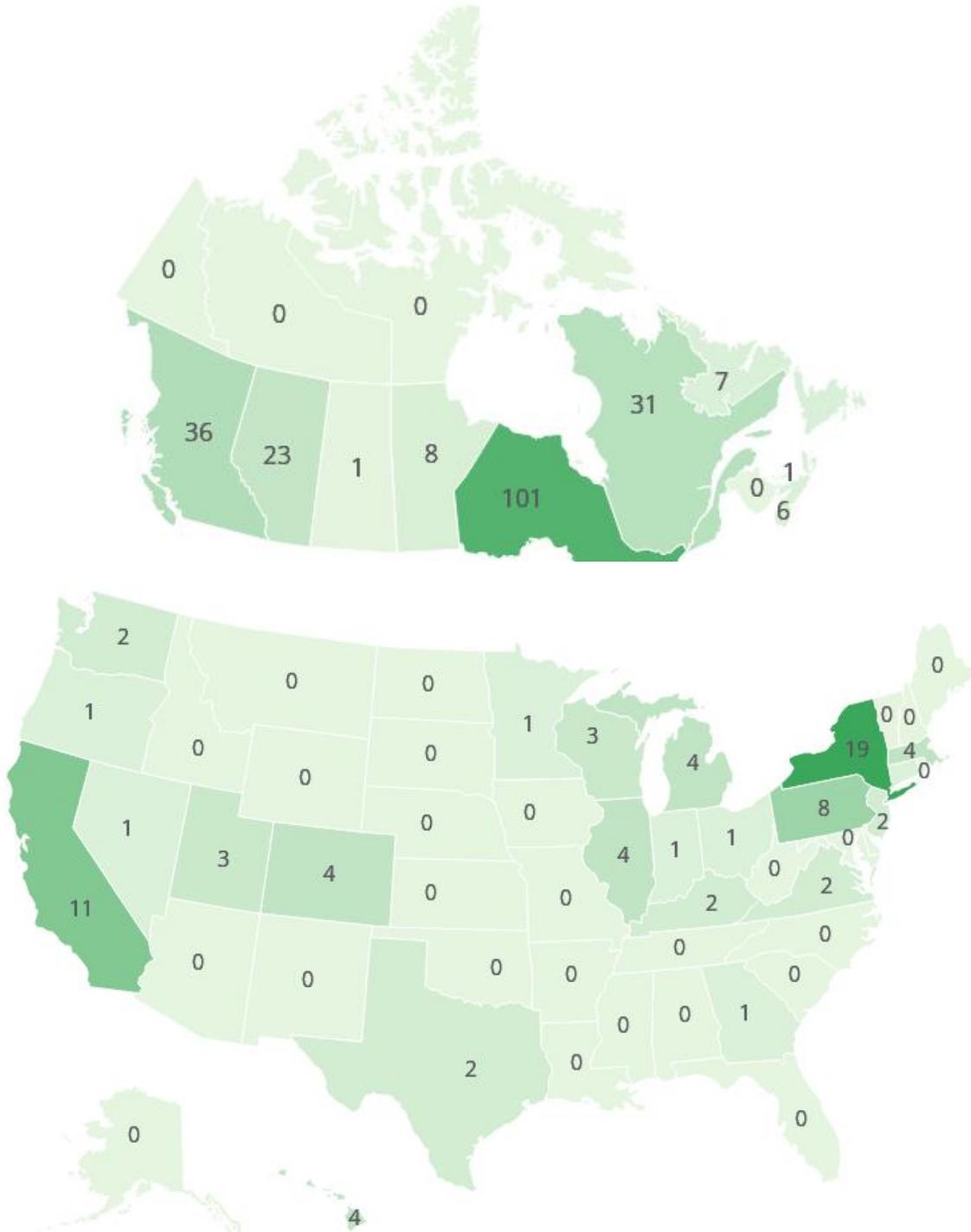
Table 1. Respondent Race/Ethnicity	N	%
White	209	83%
Asian	41	16%
Hispanic or Latinx	3	1%
Middle Eastern or North African (MENA)	8	3%
Black, African American, or of African descent	0	0%
American Indian, Alaskan Native, or Indigenous Peoples of Canada	1	<1%
Native Hawaiian or Other Pacific Islander	0	0%
Total Respondents	251	--

Respondents could select more than one race/ethnicity. Percentages reflect the total number of respondents indicating each item divided by the total number who responded to the question.

Geographic Representation

Among the 308 respondents to the PSS 2022 who indicated they hold Canadian citizenship, 28% reside in the U.S., 70% reside in Canada, and 2% reside in other countries. Specific states and provinces for Canadian citizens are shown below. Darker shading indicates greater numbers of respondents in each province or state.

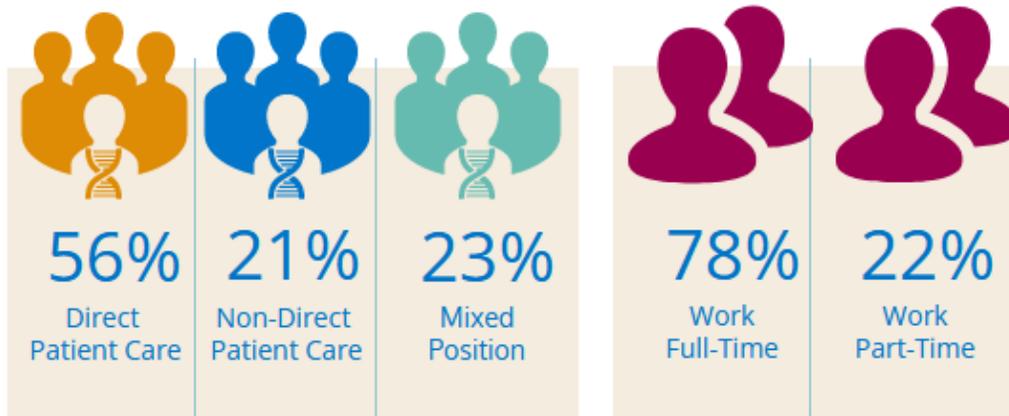
Figure 1. Canadian Citizens' Home Residence



Work Environment

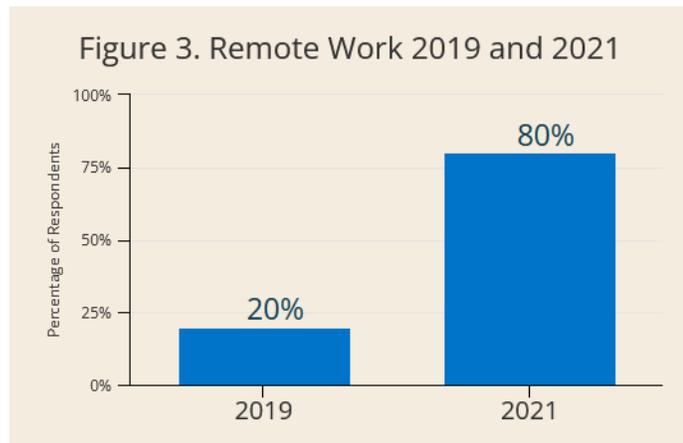
Among the 251 respondents to the PSS 2022 who live and/or work in Canada, 242 (96%) currently work in the field of genetic counselling. Over half (56%) work in direct patient care positions, 21% in non-direct patient care positions, and 23% in mixed positions. Approximately three-quarters of genetic counsellors (78%) work full-time and 22% work part-time.

Figure 2. Types of Positions



Genetic counsellors who responded to the 2022 PSS reported working for a wide variety of employer types. Sixty-nine percent of genetic counsellors who responded to the PSS work in hospital settings. As would be expected, those who provide direct patient care were more likely to be employed by a hospital or other medical setting than those in non-direct patient care or mixed positions. Conversely, those in non-direct patient care positions were more likely to be employed by a diagnostic laboratory or at a university.

Eighty percent of respondents who live and/or work in Canada reported they worked remotely for some portion of the time in 2021⁷. This compares to 20% who reported working remotely in 2019⁸, prior to the COVID-19 pandemic shutdowns. Among this year's PSS respondents, 65% have the option to decide to work a proportion of time remotely and 15% work in positions that are remote by definition.



⁷ As reported on the 2022 PSS.

⁸ As reported on the 2020 PSS.

Cancer Genetics (Adult), Prenatal, and Adult Genetics, were the top three practice areas cited by genetic counsellors. The next two most common areas reported were Preconception/Reproductive Screening and Pediatrics.

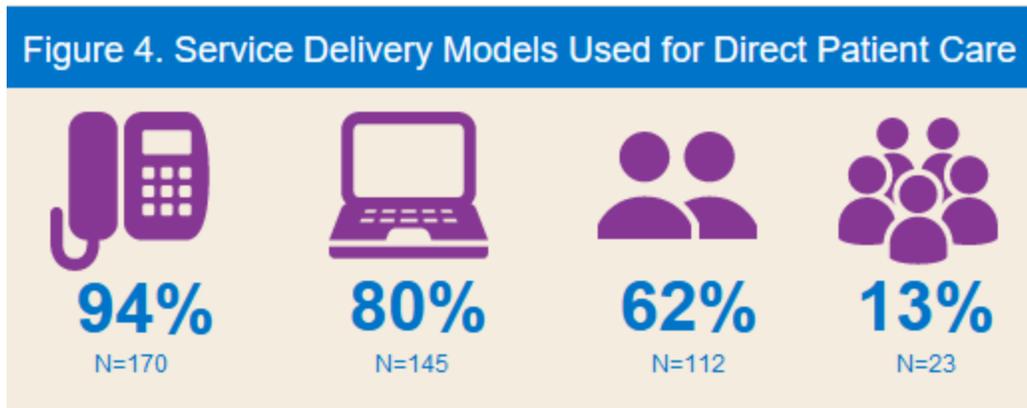
Table 2. Top 5 Practice Areas	Direct patient care		Non-direct patient care		Mixed position		All Positions	
	N	%	N	%	N	%	N	%
Cancer Genetics - Adult	69	51%	10	20%	21	38%	100	42%
Prenatal	55	41%	9	18%	13	24%	77	32%
General Adult Genetics	54	40%	4	8%	11	20%	69	29%
Preconception/Reproductive Screening	46	34%	1	2%	9	16%	56	23%
Pediatrics	39	29%	2	4%	11	20%	52	22%

Over half of full-time genetic counsellors (51%) work beyond scheduled work hours each week. The average number of extra work hours reported per week was 7.3, with a median of 5 extra hours.

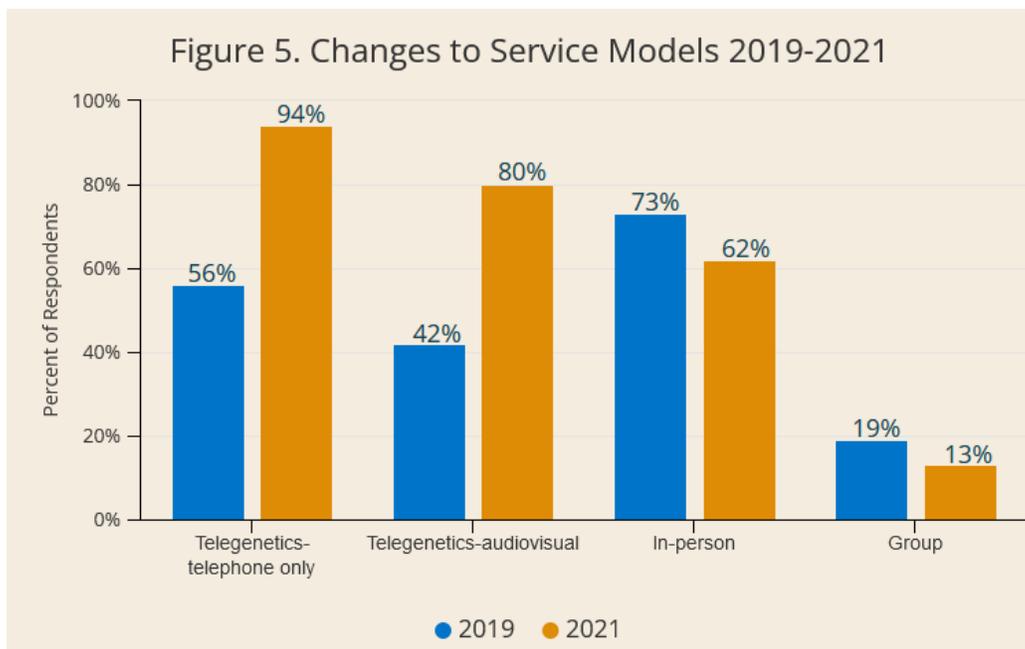
Table 3. Extra Work Hours (per week)	N	Mean	Median	Min	Max
Direct patient care	75	6.5	3	1	45
Non-direct patient care	24	8.0	5	1	45
Mixed position	30	8.4	5	1	40
Total	129	7.3	5	1	45

Service Delivery and Access

The most common service delivery model reported by genetic counsellors who delivered direct patient care in 2021 was telegenetics-telephone-only (94%). This is a significant increase from the 56% who used telephone delivery in 2019⁹.



Eighty percent utilized telegenetics-audiovisual compared with 42% in 2019. In-person delivery was used by 62% of genetic counsellors in 2021 compared to 73% in 2019. Group delivery was used by 13% of genetic counsellors in 2021 compared to 19% in 2019.



⁹ As reported on the 2020 PSS.

Respondents to the PSS who work full-time and provide direct patient care reported average weekly visits of 5.9 new patients and 3.3 return/existing/results patients¹⁰. Responses ranged from 2 to 12 weekly new patient visits and 1 to 7 return/existing/results visits, after outliers were removed from the analyses. These averages include all areas of practice and types of service delivery (in-person, phone, web-based/video, and group sessions). The average monthly caseload was 52.1, compared to 49.7 in 2020 and 51.9 in 2018. These averages include all areas of practice and types of service delivery (in-person, phone, web-based/video, and group sessions).

Genetic counsellors are most likely to receive referrals from physicians specialized in primary care or medical genetics.

Table 4. Medical Specialty of Referrals	N	%
Primary Care (including Family Practice and Internal Medicine)	111	67%
Medical Genetics/Other Genetic Counsellor	85	51%
Ob/Gyn	70	42%
Oncology - Adult (all types)	69	42%
Patient self-referral	61	37%
Cardiology	59	36%
Endocrinology	55	33%
Reproductive Endocrinology/Fertility/IVF	55	33%
Dermatology	54	33%
Surgery (all types, including breast, colorectal, pediatric, etc.)	54	33%

Respondents could select more than one item. Percentages reflect the total number of respondents indicating each item divided by the total number who responded to the question.

¹⁰ Results show genetic counsellors who reported one or more visits. Zeros were not used in these analyses because they would artificially deflate averages for patient visits. Outliers were removed from the analyses.

Salary and Benefits

Of the 251 genetic counsellors who live and/or work in Canada, 83 (33%)¹¹ provided salary information. Of these 79 worked full-time, and their average salary was \$98,209 CAD. This compares to \$95,104 CAD in 2019¹² \$87,526 CAD in 2017. Variation is seen in the average salary when taking into consideration roles, with direct patient care roles earning an average of \$88,957 CAD, mixed positions earning an average of \$96,655 CAD, and non-direct patient care earning an average of \$113,959 CAD.



Among the 13 genetic counsellors who graduated in 2021, the average starting salary was \$73,360 CAD.

The top ten benefits offered to genetic counsellors are dental insurance (76%), health insurance (69%), disability (short or long term) insurance (68%), pension (62%), Employee Assistance Program (62%), life insurance (60%), accidental death and dismemberment insurance (59%), vision plan (59%), continuing education/conference funding (46%), and retirement savings (with employer match) (39%).

Professional Development

Pathway to Promotion

Genetic counsellors who responded to the PSS reported different experiences regarding the availability of pathways to promotion within their current position. Thirteen percent reported a pathway to promotion (either specific to genetic counsellors or not), and another 2% reported that a career ladder was being developed. The most commonly reported aspects considered for pathway to promotion were years of experience and managerial/supervisory roles. Thirty-four percent of genetic counsellors who responded to the 2022 PSS had faculty appointments. The most common faculty titles were Lecturer and Clinical Instructor.

¹¹ This compares to 79% of PSS 2022 respondents (includes U.S. participants) who shared salary information.

¹² As reported on the 2018 PSS.

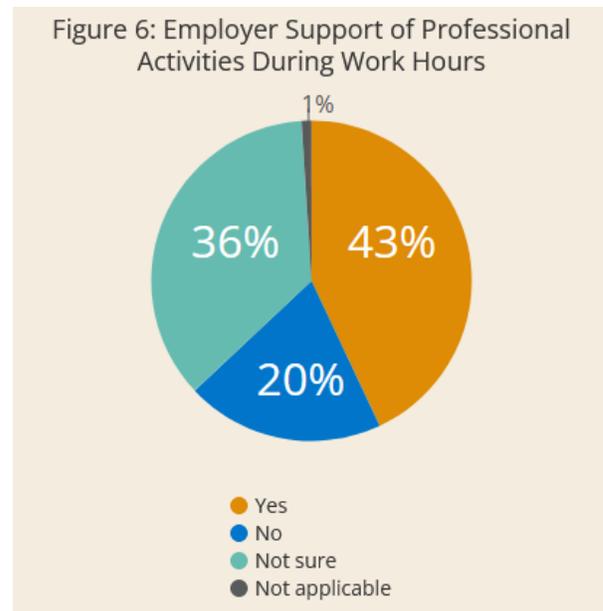
Research Activities and Publications

More than one third of genetic counsellors who responded to the PSS (37%) reported being involved in research activities. One out of ten genetic counsellors who responded to the PSS (10%) applied for grant funding in 2021. The most common role in grant-funded research is Co-Investigator. Eighty-seven percent of genetic counsellors reported that they authored or co-authored publications in 2020 or 2021. This compares to 62% reported among all respondents to the PSS 2022. The most common publications were abstracts and/or posters (39%), followed by articles or case reports (25%).

Professional Activities

Two of three genetic counsellors (68%) reported that they engaged in professional activities in 2020 or 2021. The most mentioned professional activities undertaken by genetic counsellors were serving on committees for professional organizations, developing genetics curricula for students/teachers, and developing/organizing conferences, workshops and symposia for health professionals.

Fewer than half of genetic counsellors (43%) report that their employer supports working on professional activities during working hours, and another 36% are unsure. Twenty percent reported working for employers that do not support them working on professional activities during work hours.



Conferences and Funding

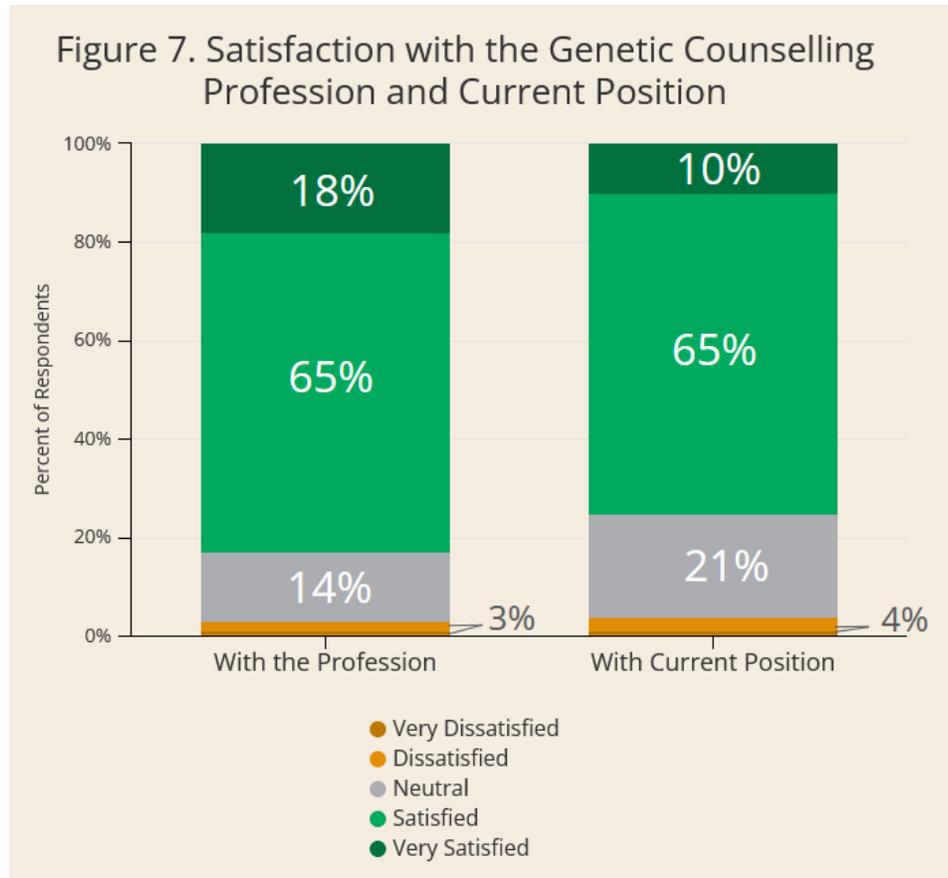
Eight of ten genetic counsellors (80%) attended conferences in 2021¹³. Of these, almost all (97%) attended for educational/continuing education purposes, and 27% to present a paper, poster, or lecture.

Sixty percent of respondents to the PSS reported receiving employer support to attend professional conferences. Genetic counsellors who work in non-direct care positions were significantly more likely than were direct patient care providers or those in mixed positions to report their employer funds all or part of their conference expenses ($p < .01$).

¹³ As reported on the 2022 PSS.

Satisfaction, Inclusion and Burnout

Respondents to the PSS were asked to rate their levels of satisfaction with various aspects of the genetic counselling profession. The majority of genetic counsellors who responded to the 2022 PSS (83%) reported they are “satisfied” or “very satisfied” with the genetic counselling profession overall¹⁴. This high level of satisfaction exists regardless of position type (direct patient care, non-direct patient care, or mixed).



¹⁴ This compares to 90% in 2020 and 85% in 2018.

Respondents were most satisfied with the intellectual stimulation of the profession and patient contact/counselling. In their positions they were most satisfied with interaction with other genetic counsellors on staff and their autonomy.

Figure 8. Satisfaction with the Genetic Counselling Profession

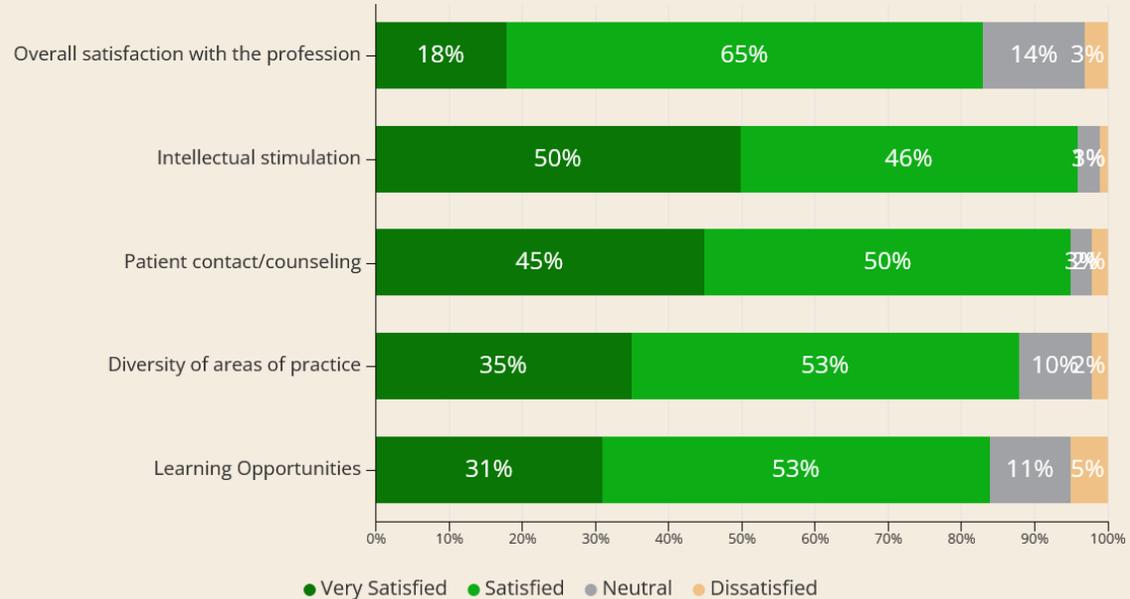
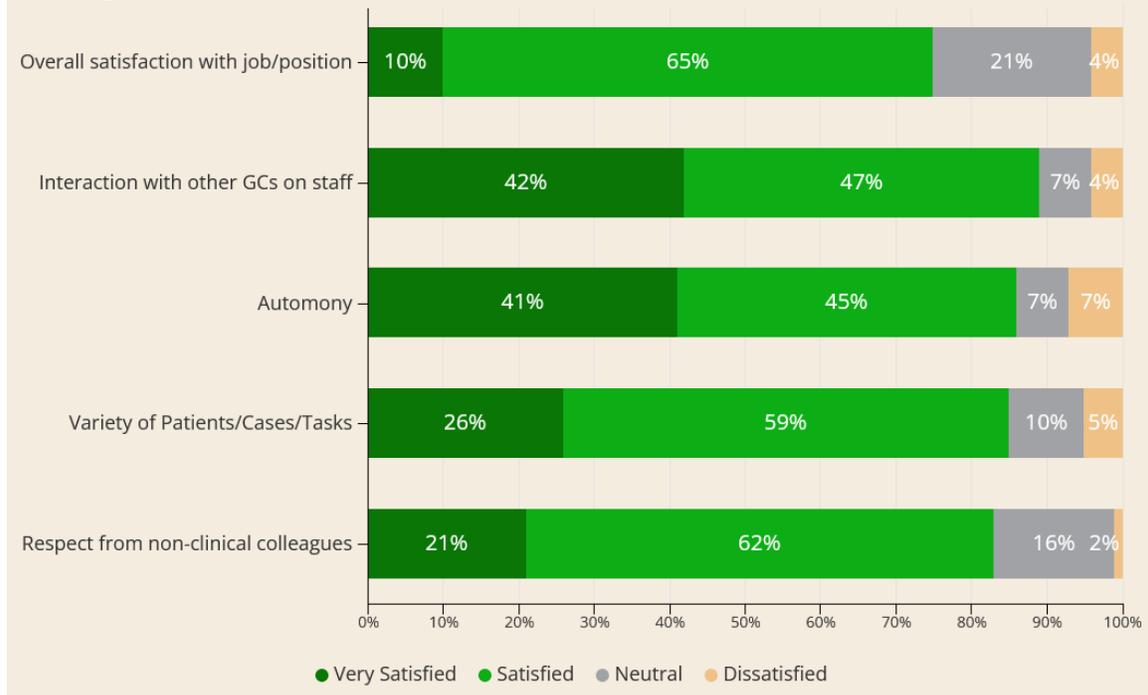
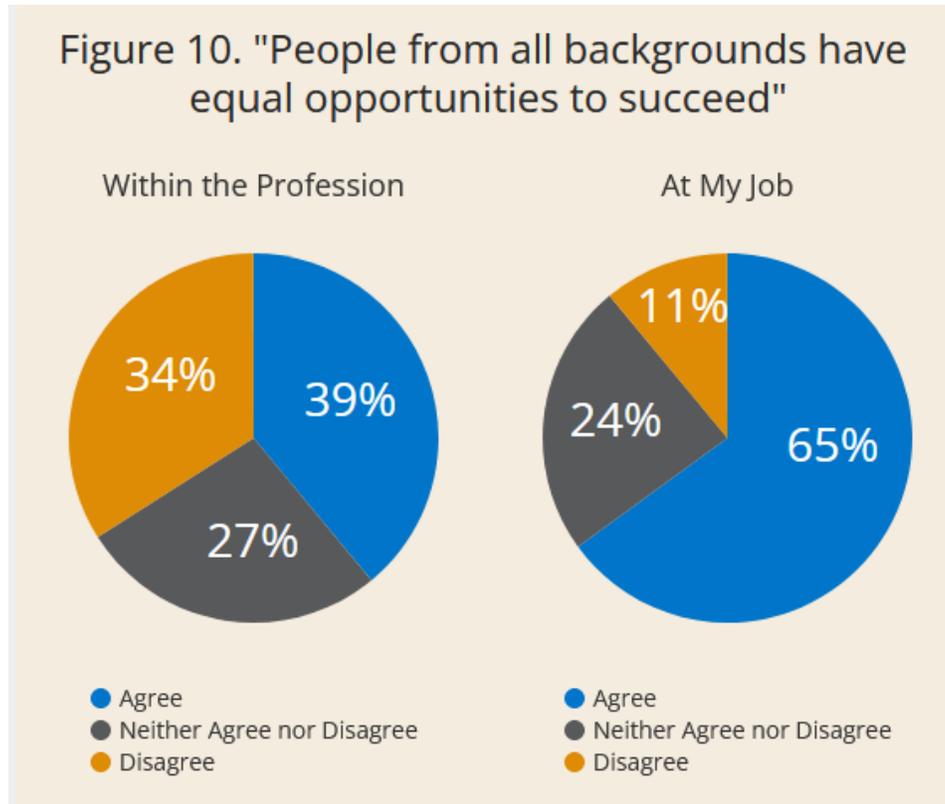


Figure 9. Satisfaction with Respondent's Job/Position



When asked about the genetic counselling profession, genetic counsellors were more likely to agree with the statements "I feel like I belong" and "I can be fully myself without having to compromise or hide any part of who I am" and significantly less likely to agree that "people from all backgrounds have equal opportunities to succeed" ($p < .01$).



Burnout is a form of exhaustion caused by constantly feeling overwhelmed. It's a result of excessive and prolonged emotional, physical, and mental stress. In many cases, burnout is related to a person's job and can be exacerbated by non-work-related stressors such as the COVID-19 pandemic. Just under half of genetic counsellors (48%) report significant symptoms of burnout, with 4% reporting severe burnout.

Table 5. Burnout Among Genetic Counsellors	N	%
1- I enjoy my work I have no symptoms of burnout	15	7%
2 - Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out	97	45%
3- I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion	76	36%
4 - The symptoms of burnout that I'm experiencing won't go away I think about frustration at work a lot	18	8%
5 - I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help	8	4%
Total	214	100%

Data Analysis and Methodology

Survey Administration

The 2022 PSS was administered online by InfoSurv Research, an independent research firm. Hundreds of real-time and server-side validation checks were built into the survey instrument to ensure client-side data accuracy. These validation checks flag data that are significantly out of expected range. To ensure reporting of accurate data, survey respondents were able to answer questions, review previous answers, modify responses, and return to the survey multiple times to complete it at their convenience.

Data Analysis & Methodology

The online administration of the PSS was completed in February 2022. The survey data were independently analyzed by Boston Information Solutions using SPSS¹⁵ version 28. The data were further validated to eliminate inconsistencies, duplicates, outliers, input errors, and other data anomalies. Frequencies and means reported are based on the number of respondents who answered the specific question. Statistical comparisons of group differences, such as T-tests and Chi-Square procedures, are reported as significant if $p < 0.05$. Percentages reported are often rounded for readability.

Data Anonymization and Privacy

Efforts are made to protect genetic counsellors' identities, and respondents are informed that they have the option of skipping questions (e.g., salary information). When $N < 10$ responses, additional measures are taken to protect individuals' anonymity. Over the past two decades, the NSGC has adhered to a strict policy whereby no aggregate salary information will be shared when $N < 5$, or in cases where any individual or group of genetic counsellors might be personally identified in the PSS reports. Raw PSS survey data are neither shared with genetic counsellors engaged in research activities, nor are the data available to employees of NSGC and CAGC. PSS data are collected and analyzed by professionals with no affiliation to the NSGC and CAGC and who are not in the genetic counselling community.

Geographic Data

The 2022 PSS asked respondents to provide their home postal codes, their work postal codes, and their employer's postal code (if they work remotely). Descriptive and comparative geographical data seen throughout the series of PSS reports (U.S. states, major metro areas, and Canadian provinces) are derived from the work postal codes reported by genetic counsellors.

Salary Data

Information about the salaries of genetic counsellors is one of the most frequently used reports of the PSS. To increase the utility of this data, the 2022 PSS asked about respondents' additional cash compensation in addition to base salary. The accuracy and specificity of the compensation analyses

¹⁵ IBM-SPSS (Statistical Package for the Social Sciences) is a widely used program for statistical analysis in social science.

depend on the willingness of genetic counsellors to divulge this sensitive information and trust that it will be held in the strictest confidence.

The NSGC and CAGC adhere to a strict policy whereby no aggregate salary information will be shared when the number of respondents is fewer than 5 (N<5) or in cases where any individual or group of genetic counsellors might be personally identified. When the number of respondents for a specific subcategory is between five or nine (N=5-9), only median and average salary data are reported to maintain privacy of genetic counsellors with outlier salary values. Additionally, PSS data are analyzed by professionals with no affiliation to the NSGC or CAGC and who are not in the genetic counselling community.

Of the 2,859 total respondents to the 2022 PSS, 2,253 (79%) shared salary information¹⁶. Of the 251 genetic counsellors who live and/or work in Canada, 83 (33%)¹⁷ provided salary information. Canadian dollars were converted to U.S. dollars based on the CAN-USD exchange rate as of December 31, 2021¹⁸. The salaries reported by genetic counsellors who lived or worked outside the U.S. and Canada were not used in the analyses. Statistical outliers (extremely high and low salaries) were removed before analyses were performed using an Interquartile Range Rule of 3. Unless otherwise noted, salary comparisons are for full-time genetic counsellors (part-time salaries were not converted into full-time equivalents). Salary information for part-time workers is reported separately.

¹⁶ 83% of 2018 PSS respondents, 85% of 2019 PSS respondents, 82% of 2020 PSS respondents, and 82% of the 2021 PSS respondents shared their salary information.

¹⁷ This compares to 79% of PSS 2022 respondents (includes U.S. participants) who shared salary information.

¹⁸ \$1 CAD=\$.7888 USD.

Learn More

In addition to the Executive Summary, the full Canadian 2022 PSS report is available to CAGC members and can be found on the CAGC website: <https://www.cagc-accg.ca/>. The full report is also available to non-members for a fee; please contact the CAGC if you would like to purchase a copy of the report: cagcoffice@cagc-accg.ca

This year's full report addresses the following areas:

1. **Demographics:** a high-level overview of the composition of survey respondents to the 2022 PSS
2. **Work Environment:** information from genetic counsellors about the nature of their work, areas of practice, and significant roles
3. **Service Delivery and Access:** how genetic counsellors deliver care and the current state of access to their services
4. **Salary & Benefits:** analyses of salaries in the genetic counselling profession including bonuses and commissions, extra income, benefits, vacation time, conference funding and employer-funded benefits
5. **Workforce Overview:** genetic counsellors' professional development and workforce trends
6. **Diversity, Inclusion and Satisfaction:** various facets of diversity, inclusion, and satisfaction with the genetic counselling profession as well as genetic counsellors reported level of burnout
7. **Canadian Citizens who Live and Work in the U.S.**

Acknowledgements

CAGC wishes to recognize and extend gratitude to the many genetic counsellors of the NSGC PSS Committee who volunteered their time and expertise for survey creation and management in partnership and collaboration with the CAGC. We also thank CAGC Administrator, Sheryl Keenan, who facilitated CAGC PSS communications and helped generate the PSS distribution list for genetic counsellors working in Canada. Finally, we thank the CAGC PSS Chair and CAGC Board of Director Liaisons, who authored and edited the 2022 PSS Canada Report. This Canada report has been reviewed and approved by the CAGC Board of Directors.

CAGC PSS Chair: Kirsten Bartels, MSc, CCGC

CAGC Board of Director Liaisons:

Danna Hull, MSc, CCGC, CGC

Emily Fox, PhD, MSc, CCGC, CGC

Alessandra Cumming, MSc, CCGC, CGC

The mission of the Canadian Association of Genetic Counsellors is to promote high standards of practice, encourage professional growth and increase public awareness of the genetic counselling profession in Canada.

The full Canada 2022 PSS report is available to CAGC members and can be found on the CAGC website:
<https://www.cagc-accg.ca/>

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