PERSPECTIVES IN GENETIC COUNSELING
NATIONAL SOCIETY OF GENETIC COUNSELORS, INC.
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COMPREHENSIVE GENETIC SERVICES IN AN HMO

Carla B. Golden

A large health maintenance organization (HMO) is an ideal system for the delivery of genetic services because it allows for a comprehensive and organized approach to clinical and laboratory genetic services. The referrals are made easily, there is no additional cost to the patient for a visit with a specialist, and medical records are often readily available. In one example of an HMO, Northern California Kaiser Permanente Health Plan, genetic services are well utilized and well received by both the patients and the clinicians.

As the cost of medical care rises exponentially and insurance plans cover fewer services, there is a need for creative alternatives to the traditional fee-for-service (FFS) care. At the turn of the nineteenth century, prepaid group medical insurance was developed for employees of the logging industry in the Pacific Northwest of the United States. Since that time HMOs have become the primary alternative to FFS. There are now more than 300 HMOs in the United States, serving more than 15 million members. Of the 38 major metropolitan areas in this country, 37 have at least one HMO (1).

On 18 February 1971, in the presidential health message, Richard M. Nixon proposed that a national network of HMOs could help contain the cost of medical care in this country. Lobbying efforts by private practitioners forced many limitations on the development of HMOs in the final version of the Health Maintenance Act, enacted by Congress in 1973. The intent of the act was not intended to abolish FFS medicine, but to force a re-evaluation of the existing system. HMOs are based on the concept of preventive health care, rather than "sick care" only. Ideally, that approach lowers the overall cost of health care and allows the patient easier access to services.

Most frequently, an HMO is paid for on a yearly basis by the member's employer, although there also are individual memberships. The fee, which entitles members to full medical services, remains the same regardless of the extent of use of services. That is unlike FFS or private insurance plans, where the patient pays an amount dependent on the deductible and the type of service each time he or she seeks medical care.

The two million members of the Kaiser plan are seen at one of 25 different hospitals and clinics in Northern California. That allows the regional genetics group to design and orchestrate referral systems for patients; referrals are made primarily from pediatrics and obstetrics and gynecology departments. The patient does not incur any additional cost for genetic services. Most patients, therefore, are inclined to follow up on a referral; many patients are self-referred.

One example of a referral system developed by the genetics group is a prenatal questionnaire, which is administered to all prenatal patients. The questionnaire is designed to identify couples at an increased risk for giving birth to a child with a birth defect or genetic disorder. The questionnaire emphasizes disorders that are diagnosable prenatally. The types of referrals obtained include women 35 years of age and older, couples at risk for a child with a hemoglobinopathy or thalassemia, insulin-dependent diabetics, couples with a family history of neural tube defects or other genetic conditions, and patients referred for possible exposure to teratogens. Patients identified through the questionnaire are referred to one of four genetics departments for counseling. Prenatal diagnosis is offered, if indicated.

Thalassemia screening also is integrated into routine prenatal care. In addition to screening prenatal patients for hemoglobinopathy traits, we also screen each patient for thalassemia traits. This allows early identification of patients with a trait such that the father of the baby can be tested. Couples found to be at risk can be counseled early in the pregnancy and offered prenatal diagnosis.

Once these systems are in place, each clinician uses the same referral system so it becomes part of his or her routine, and there is a consistent pattern of referrals. The structure of the HMO facilitates a team approach to each patient by the primary practitioner and any required specialist. There is a great deal of communication between various departments that provide care for the same patient.

Referrals to the genetics department are made without the fear of losing one's patient to a specialist, because all clinicians work for the same organization. An additional benefit of the HMO plan is accessibility of medical records following referral. That saves time and allows easy access to follow-up information.

The plan described herein is but one alternative to the traditional system of medical care; there is rapid growth in alternative health care plans, including HMOs and preferred provider plans. Nitowsky stated that "the term genetic prognosis implies an interest in prevention . . ." (2). An HMO provides an ideal structure for the delivery of genetic services because one goal of an HMO is preventative health care. There is great potential for integrating comprehensive genetic services into these health plans.

Carla B. Golden is a genetic counselor with the Permanente Medical Group, San Francisco, CA 94115.

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Suggested Reading

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"PRO-CHOICE" UPDATE

In response to concerns raised by NSGC members at the November 1986 membership meeting, the board of directors established as a priority a poll of the members on the issue of pro-choice with respect to abortion. In November 1986, a survey prepared by the professional issues committee (PIC) and the social issues committee (SIC) was sent to all full members of NSGC (N=406). Question 56 on the survey asked: "Do you believe the NSGC, as an organization, should publicly support pro-choice activities?" Because of the pressing nature of that question, we hand tallied responses in order to report those results independent of the remainder of the survey. We received and tallied 240 responses to this question as of 13 February 1987: a return rate of 59 percent. The results are shown in Table I.

TABLE I

Responses to question 56: Do you believe the NSGC, as an organization, should publicly support pro-choice activities? (N=240)

A.	not at all	16	(7%)
B.	only as they pertain to prenatal diagnosis	111	(46%)
C.	unconditionally	109	(45%)
B and C; Yes, but not A, B, C		4	(4%)
Combined "yes" answers:		224	(93%)

In addition, more than 100 members commented on this issue. Their major comments and concerns are summarized below.

1. The NSGC serves a profession (genetic counseling) that is based on an individual's right to choose. "Pro-choice" means that we support any personal reproductive choice, including a woman's right to terminate a pregnancy; it does not mean "pro-abortion."
2. Many couples will choose to terminate a pregnancy because they are at risk for a genetic disorder for which there is no prenatal diagnosis. This was cited as a primary reason for responding "unconditionally."
3. The NSGC will continue to support a couple's right to continue a pregnancy, and to serve persons who are "pro-life." Several respondents who chose "not at all" cited their concern that a pro-choice stance would alienate this group.

Ninety-three percent of respondents prefer to see the NSGC publicly support some, if not all, pro-choice activities. This is a clear indication of the membership's desire, although there is a considerable split between those who would prefer that NSGC support all pro-choice activities and those who would limit the support to issues pertaining to prenatal diagnosis.

The board acted on this issue by contacting pro-choice organizations to determine whether the NSGC can establish liaisons with them or join their networks to determine how these organizations might help educate NSGC members about threats to abortion rights and other pro-choice issues (for example, legislative alerts and newsletters), and to solicit their suggestions on how NSGC might best influence this issue (for example, respond publicly).

Board members have identified and contacted the three major national pro-choice organizations that monitor Congress legislature and distribute national newsletters. They are:

1. National Abortion Rights Action League (NARAL)
   1101 14th Street, NW, Washington, DC 20005
   (202) 371-0779
2. Planned Parenthood Federation (PP)
   2010 Massachusetts Avenue, NW, Washington, DC 20036
   (202) 785-3351
3. Religious Coalition for Abortion Rights (RCAR)
   100 Maryland Avenue, NE, Washington, DC 20002
   (202) 543-7032

All three organizations responded positively to interest from NSGC, but had no current projects in which to involve us. Each group provided suggestions on future activities, ranging from those that might be considered aggressive (for example, a press release on a specific issue of national significance) to those that would be relatively passive (for example, arranging for NSGC members to receive literature from each group regularly).

The social issues committee has formulated the following plan for review by the full board:

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1. NSGC representatives will meet with each organization listed to define NSGC's options before announcing any formal alliances or deciding on specific strategies. Any such liaison will require review by the NSGC legal counsel, as well as approval by the board.
2. The social issues committee will create a subcommittee to initiate and coordinate pro-choice activities and to educate the NSGC membership on this issue.
3. NSGC representatives will contact the American Society of Human Genetics (ASHG) and Coalition of Regional Networks (CORN) to coordinate pro-choice efforts.

Clearly, if NSGC were to serve as an advocate for pro-choice on a national level, there would be an enormous need for individual participation at the state and local levels from those concerned with this issue. The Supreme Court's decision in Roe vs. Wade guarantees a woman's right to abortion in the first trimester only. The courts also allow for abortion and induction of labor in certain circumstances in the second and third trimesters. Those circumstances are defined and regulated by individual states. State requirements for access to these services have grown increasingly restrictive, and some states now have proposals to restrict access even further.

If you would like to work on this issue, or have comments for the board on the national level, as well as your work on the state level, please contact: Trish Magyari, MS, Genetic Counseling Program, 306 BSRC 220H, UNC-CH, Chapel Hill, NC 27514. Your comments are welcome.

Trish Magyari
Chair, Social Issues Committee

CASE REPORTS IN GENETIC COUNSELING

Case No. 6

First trimester prenatal diagnosis by chorionic villus sampling (CVS) is an option available to an increasing number of couples considering prenatal testing. Often, it is the role of the genetic counselor to help couples choose between CVS and amniocentesis. The counseling is challenging in that one has to help couples assess their feelings about the differences in timing and complications between the two procedures. Another equally important goal is to prepare couples for the possible outcomes of CVS testing including sample failure, complications to the pregnancy or maternal health, and placental mosaicism.

With CVS, the rate of mosaicism is approximately 2 percent (1) which suggests that a significant number of couples will face this uncertain result. Although most genetic centers have experience managing patients with mosaicism following amniocentesis, mosaicism in CVS presents a new situation for which there is little experience. Most centers recommend amniocentesis to confirm the diagnosis. The counseling dilemma lies in making this recommendation to couples who have selected CVS instead of amniocentesis. If the couple accepts the recommendation, the period of anxiety caused by unknown results is lengthened. Clearly, this is a very stressful experience, as the following case illustrates.

A.P. is a 37-year-old, gravida V, para I, abortus III woman who came for prenatal diagnosis by CVS because of advanced maternal age. In her current marriage, she had two first-trimester miscarriages, and a healthy son. Prior to that marriage, she had a first-trimester elective termination. Her experience with first-trimester abortion was traumatic, and she would not consider amniocentesis because of her fear that second-trimester abortion would be worse. She requested CVS based on the early availability of results.

Mrs. P.'s husband did not accompany her to the counseling session. Mrs. P. informed us that he had read the information we had sent at the time of referral and felt the risk of medical complications from CVS was too high. However, he apparently told her to "have CVS if that was what she wanted." Mrs. P. seemed to be making the important decisions concerning the pregnancy by herself. After a review of information about CVS, Mrs. P. felt comfortable with her decision to have the procedure, which was to be performed that day. Uterine contractions seen on ultrasound required that her appointment be rescheduled. The procedure was performed without difficulty one week later.

Results from the direct preparation of the villus tissue (no long-term tissue culture was established) available seven days later yielded a fetal karyotype of 46, XY/47, XY + 7. Trisomy 7 was seen in 9 out of 18 analyzed cells (50 percent).

Trisomy 7 is rare as a clinical entity. Most reported cases were abortus tissue (2). A small number of full trisomy 7 infants have been described with dysmorphic features and renal agenesis leading to Potter syndrome (3,4). There was one reported case of familial trisomy 7 in a mother and daughter with normal phenotypes. The mother was ascertained as a psychiatric patient. The level of mosaicism was 14 percent in the mother, 9 percent in the daughter (5). Based on the small number of case reports of trisomy 7 and their varying nature, it is difficult to predict the probable phenotype of mosaic trisomy 7. However, there appears to be an increased risk of spontaneous abortion and possible serious birth defects.

We contacted other genetic centers offering CVS in formulating the diagnostic interpretation of our CVS case. Staff at those centers concurred that our results most likely represented mosaicism confined to the placenta. All centers suggested amniocentesis for confirmation.

We did not want to direct the patient into the amniocentesis procedure because of her strong feelings against it. However, without results from amniocentesis we could not make a definitive statement about the cytogenetic status of the fetus. Even with those results, we could not guarantee a definitive diagnosis. The stress of that situation was increased because the patient would have to wait six weeks for amniocentesis and approximately three additional weeks for results. Furthermore, her husband was apparently not supportive of the situation.

We contacted the patient by telephone to explain our findings and to recommend amniocentesis. Mrs. P.'s initial reaction was shock and frustration. We requested that she and her husband come in the next day to review the information fully. She declined, stating that she would share the information with her husband. She seemed once again to take sole responsibility for the situation. The next day, she called to tell us that both she and her husband felt that continuing the pregnancy to amniocentesis was their only option. The procedure was scheduled for 16 weeks gestation.

In a counseling session prior to amniocentesis, which Mr. P. did not attend, Mrs. P. told us of her anxiety about the possibility

of an abnormality. As she explained her feelings, it was clear that she felt that she was at very high risk for an abnormal outcome. She also related her growing feelings of isolation and depression, as she and her husband felt unable to share this information with anyone except close friends. After the amniocentesis, Mrs. P. was left alone to finish dressing, and she began to cry. She told us later that her mounting sense of tension and fear of a second-trimester abortion seemed too great to bear. Possibly, she was feeling an added burden, having taken sole responsibility for the decision to have CVS.

Cytogenetic analysis of the amniotic fluid cells yielded a fetal karyotype of 46, XY in 50 analyzed cells, which suggested that the mosaicism was confined to the placenta. Mrs. P. was much relieved and elected to continue her pregnancy. Mrs. P. felt the mosaicism was resolved despite our previous counseling about its possible effects on the pregnancy. At term, Mrs. P. delivered a healthy male infant.

The feelings of acute anxiety that our patient experienced while waiting for results from amniocentesis have been described previously (6). With mosaicism in CVS, couples are asked to wait more than two months for possible resolution of what appears to be an abnormal result. The length of the wait, combined with the uncertainty of diagnosis, is particularly devastating.

Since the experience with this case, our center has had three other CVS results with mosaicism. Two of those patients had subsequent amniocentesis with normal results. Their pregnancies are continuing without complications at present. One patient with a 46, XY/46, XX mosaicism opted to continue her pregnancy without amniocentesis and subsequently miscarried at approximately 14 weeks gestation; this occurred two weeks after a cervical cerclage.

We have altered our pre-CVS counseling to include an emphasis on the possibility of placental mosaicism. Although no amount of information and preparation can totally alleviate the anxiety involved in a mosaic result, we believe that it helps lessen the shock. Prior knowledge of this possibility allows the couple to move through their feelings of surprise into a clearer understanding of their situation.

Carla B. Golden, genetic counselor
The Permanente Medical Group
San Francisco, CA 94115

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CORRESPONDENCE

To the Editor:

I read with interest the results of the professional status survey (*Perspectives,* Vol. 8, No. 2) by Debra Collins. However, I believe some concerns must be raised regarding the inherent bias of ascertainment of the 1985 survey population and the interpretation of the survey results.

Ms. Collins states that the survey was "handed to all members attending the combined NSGC-ASHG meetings in Salt Lake City, Utah." Although she states "Of those responding, 141 were full members . . ." there is no comment regarding the number of surveys that were actually handed out, thus the denominator is unknown. In addition, the current NSGC membership is more than 600, thus, this sample represents a mere 20 percent of the NSGC memberships and an even smaller percent of genetic counselors nationwide (including those who are not NSGC members).

Table 3 of Ms. Collins' article lists the regions where the respondents are located. Is that distribution a representative sample of genetic counselors nationwide? Do a third of all genetic counselors or even of the NSGC membership live in region VI, which includes Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, Washington, Canada: BC, and Mexico?

The statement that "Salaries have increased over the last three years . . ." cannot be made with certainty, because the results of the survey conducted three years ago were compiled from questionnaires mailed to the entire NSGC membership. The extrapolation of the results from the 1985 survey to the NSGC membership as a whole is fraught with numerous pitfalls.

In the future, the professional status survey of the National Society of Genetic Counselors should be carried out in a more comprehensive and consistent manner. The results of the 1985 survey cannot be compared to the results of the surveys that were published in 1981 and 1984.

Elizabeth J. Thomson
Department of Pediatrics
University of Iowa Hospitals
Iowa City, IA 52242

Ms. Collins' reply:

Ms. Thomson has made several valid points regarding the survey of attendees at the national NSGC meeting in Salt Lake City in October 1985. This survey was not intended to be a comprehensive survey of the membership, but rather a method to update issues currently concerning members. The surveys were distributed to the 238 attendees at the national meeting. Of the 147 respondents, 141 were full members, 6 were nonmembers. The other attendees were nonrespondents. The number of full members of NSGC at that time was 383, with additional associate (59) and student (120) members; obviously, nonmembers are difficult to survey. Although fewer members received the survey, the number of respondents was similar to that for surveys mailed to the full membership: 150 full members responded to the 1981 survey, 190 responded in 1984.

Both previous surveys were more extensive and were sent to the entire membership. The professional issues committee, however, felt that a shortened version was a faster way to update

rapidly changing demographic data, particularly with respect to salaries. We chose this method to address some current issues such as faculty status and reimbursement for professional services. The data are potentially biased because it is likely that more members from regions V and VI attended than if the meeting had been held in another area. There was an increase in responses from the west coast, midwest, and Rocky Mountain States, regions that were not well represented in past surveys.

Salaries for genetic counselors from the northeast and California are higher than for genetic counselors in other regions and, therefore, the overall survey is sometimes disregarded by hospital administrators. The regional distribution was included to show that only 50 percent of the respondents were from those two areas and another 50 percent indeed were from the midwest, southeast, and Rocky Mountain areas. So, contrary to some thinking, the data are applicable for genetic counselors in those regions.

The survey may be biased because those attending the meeting may be those members more interested in continuing professional education, those with higher salaries, or those with institutional support to attend meetings. I believe that these are counselors to whom most of us would like to be compared. We would all like to receive average or higher salaries, as well as reimbursement for travel to meetings. Data such as those derived from the survey in question support the members as they negotiate for such arrangements.

Clearly, we must consider how to obtain data that best serve the membership. Is it helpful, for example, to distribute a short survey annually, or would members prefer to complete a more comprehensive survey less often, even though some of the data that result may be dated? Will members continue to complete those? The committee welcomes suggestions and new members; committee participation is an excellent way to become involved with NSGC. We look forward to hearing from the membership about the issues discussed above.

Debra L. Collins
Chair, Professional Issues Committee

To the Editor:

My husband and I have recently been through an experience that your readers might find relevant in counseling some of their clients. When I was six months pregnant, our child was diagnosed as being anencephalic during routine ultrasound testing. At that time, it was suggested by several involved persons that we abort this baby. However, we feel extremely strongly that all children are gifts from God, valuable and precious, regardless of physical limitations, and we made the decision to carry our child to term. After months of prayerful waiting, Joshua Michael was born on 4 July 1986. During his short 12 hours of life outside the womb, we were able to hold and cuddle and love our son until he was gathered up again to his Creator. Though we miss Joshua very much and grieve deeply, we were grateful to be able to share our few hours together.

During the course of our trial, we were counseled to abort a number of times, and we firmly believe that this was absolutely wrong. If our child was missing an arm or leg, we certainly would not have loved him any less, and even though his defect was more severe, it did not change our feelings toward him. There should be no prerequisite on how perfect a child must be or how long that child must live before he or she is allowed the dignity of birth and love, and certainly choosing to voluntarily take that child's life serves no purpose. Parents in this situation must be counseled on how to deal with their grief, because the grief will occur regardless of whether abortion occurs. Abortion does not eliminate the grief, it only compounds the problem. Abortion only brings with it the guilt of not only taking the child's life, but of not acknowledging the personhood and value of one's own baby. We would ask your readers to consider the many positive and healthy aspects of carrying a baby to term in this difficult situation, and remember that in any pregnancy, there is both a mother and a child.

Amy L. Longacre
4512 Lin Gate Street
Pleasanton, CA 94566

RESOURCES

Newsletter: G.I. Polyposis and Related Conditions

The Moore Clinic, Johns Hopkins Hospital, has established a newsletter for families and professionals to exchange information on hereditary colon cancer and/or polyposis conditions. Plans are in progress to establish a support group for families and to serve as a forum for those scientists developing registries for research on colon cancer. Organizers request that genetic counselors refer families for inclusion in the registries and on the mailing list. For more information contact: Anne Krush, MS, Newsletter: G.I. Polyposis and Related Conditions, The Moore Clinic, Johns Hopkins Hospital, Baltimore, MD 21205, phone: (301) 955-3875.

Miscarriage: A Shattered Dream, by Sherokee Ilse and Linda Hammer Burns, Wintergreen Press, P.O. Box 165, Longlake, MD 55356, 1985, 58 pages, no price listed.

This book is intended for couples who have experienced pregnancy loss prior to 20 weeks gestation. The introduction relates the authors' accounts of their own miscarriages and includes some general statistics on pregnancy loss and on the range of reactions to the event. The introduction clarifies that the book addresses not only couples who have experienced their first loss, but also those who have had multiple miscarriages.

The first chapter, "Attachment: The Beginning of a Relationship," describes for parents in a straightforward fashion the emotional bonding that took place between them and their lost baby. The authors combine scientific facts with human emotions. Chapter 2, which is very informative, reviews the causes and symptoms of miscarriage, while the third chapter offers practical advice on emotional healing following pregnancy loss.

Chapters 4 and 5 are future-oriented as well. "The Days Ahead" addresses pregnancy loss from the perspectives of the various persons involved, for example, the single woman, the couple, the father, siblings, and grandparents. The section on siblings is especially detailed, with a chart on death response for various ages and suggestions for how to explain the loss to children.

Chapter 5 provides a brief synopsis of future options and reproductive alternatives. The chapter leaves the reader with many questions due to its brevity, but this can be a good starting point that requires supplementary information from the counselor.

Genetic counseling and reproductive technologies are mentioned, but without adequate explanation. It would have been effective to combine this information with the last section on resources and include phone numbers of national genetics groups.

This resource is an excellent introduction for lay persons and professionals into the feelings and facts of miscarriage. The book will be useful for both pediatric and prenatal genetics centers, where patient histories reflect a high rate of spontaneous abortions. The vocabulary may be a bit difficult for a clinic population; however, chapters are short and tend to be composed of short sentences. Illustrations and short poems break up copy and provide reader appeal.

Melonie Krebs
Children's Hospital
Akron, OH 44308

"Gifts of Love," (3/4" and 1/2" videocassette, 23 minutes), 1982, no price listed. National Down Syndrome Society, 700 W. 40th Street, New York, NY 10018.

This program is intended primarily for parents or care providers of a recently diagnosed child with Down syndrome. It also is appropriate for the general public or allied health professionals as an introduction to Down syndrome. Four families who have had a child with Down syndrome talk about their initial feelings upon the birth of their child, adjustment and acceptance periods, and thoughts on the future. They each share practical suggestions on coping, interactions with others, physical and emotional problems their children experience, and educational programs. Pleasant footage of family and school life is included, as well as statements from siblings.

A narrator provides background information that includes statistics on Down syndrome, an explanation of chromosomes, problems associated with Down syndrome, and the risk of advanced maternal age. There is strong emphasis on the importance of parent support groups.

This videotape takes an honest and positive approach to management and family coping. Difficulties associated with raising a handicapped child are not dismissed, but are de-emphasized. Although one of the children spotlighted is black, the show seems to be directed primarily at the white, middle class family. What is obviously missing is information on prevention such as facts on genetic counseling and prenatal diagnosis. "Gifts of Love" is an excellent introductory resource that can be used as a supplementary tool in genetic counseling and education.

Melonie Krebs
Children's Hospital
Akron, OH 44308

Editor's note: We hope to review in each issue one print and one audiovisual resource. In addition, we wish to provide information on a group or organization whose program can assist counselors in their work with patients and families. Please send reviews or information on groups and resources to: Melonie Krebs, Genetics Center of Children's Hospital Medical Center of Akron, 281 Locust Street, Akron, OH 44308.

POSITIONS AVAILABLE

Genetic Counselor: A full-time position is available for a board certified/eligible genetic counselor in the Medical Genetics Department, Shodair Children's Specialty Hospital, Helena, Montana. Duties would include primarily coordination of a statewide MSAFP program as well as interfacing with an established, broadly diverse genetics program in a serene mountain setting. Salary commensurate with training and experience. Send vitae or call: John M. Opitz, MD, or Joan FitzGerald, MS, Department of Medical Genetics, Shodair Children's Specialty Hospital, P.O. Box 5539, Helena, MT 59604, phone: (406) 442-1980. Affirmative action/equal opportunity employer.

Genetic Associate and *Coordinator:* Two positions are currently available in a growing University of British Columbia medical genetics clinic, Grace Hospital, Vancouver. Formal training as a genetic associate preferred (MS degree). Send resume to: J.G. Hall, MD, UBC Department of Medical Genetics, Grace Hospital, 4490 Oak Street, Vancouver, BC V6H 4V5. UBC is an equal opportunity employer. Preference will be given to Canadian citizens of landed immigrants.

Genetic Counselor: A position is available for a board certified/eligible MS genetic counselor in a growing genetics center located in Columbia, South Carolina. The center provides all phases of genetic counseling: prenatal diagnosis (both CVS and amniocentesis), pediatric genetics, outreach program, and specialty clinics. Teaching responsibilities will involve professional and lay audiences and in the new Master of Science Genetic Counseling Program. Cultural and recreational activities abound in the state capital, also home of the University of South Carolina. You can have sunshine, the mountains, and the ocean along with a challenging position. Please send resume to: S. Robert Young, PhD, Division of Clinical Genetics, Department of OB/GYN, University of South Carolina School of Medicine, 3321 Medical Park Road, Suite 301, Columbia, SC 29203, phone: (803) 765-7316.

Genetic Counselor: A position is available immediately for a genetic counselor in the clinical genetics program, Crippled Children's Division, Oregon Health Sciences University. Activities include prenatal diagnosis clinic, genetics diagnostic and counseling clinic, and fetal/neonatal loss program. Salary is $22,000-$25,000 dependent on experience; board eligible genetic counselor with master's degree or RN with master's degree or equivalent training, and genetic experience required. Please contact or send resume to: Karen Kovak, MS, Child Development and Rehabilitation Center, Oregon Health Sciences University, P.O. Box 574, Portland, OR 97207, phone: (503) 225-8344. The Oregon Health Sciences University is an affirmative action/equal opportunity employer.

Genetic Associate: The Division of Reproductive Genetics at Hutzel Hospital/Wayne State University has a position for a full-time genetic associate. The position requires a master's degree in genetic counseling and board certification or board eligibility. Experience is preferred, but not necessary. Responsibilities and activities include prenatal diagnosis, maternal serum alphafetoprotein screening, and opportunities for research. Chorionic villus

sampling and amniocentesis are performed at this center. This division is the largest prenatal diagnostic center in the area. Excellent salary and fringe benefits. For more information please contact: Robin Belsky, MS, or Mark I. Evans, MD, Division of Reproductive Genetics, Hutzel Hospital/Wayne State University, Department of OB-GYN, 4707 St. Antoine Boulevard, Detroit, MI 48201, phone: (313) 745-7066.

Genetic Education Specialist: A full-time/part-time opening exists for a professional with a clinical background in human genetics to work with the Massachusetts Genetics Program, Maternal and Child Health Section, Massachusetts Department of Public Health. Primary responsibilities include developing educational literature and media campaigns for professionals and consumers on topics related to genetics; monitoring distribution of materials; preparing statistical summaries and reports; conducting in-service training and seminars on topics related to genetics for professional and consumer audiences; promoting linkage between the genetics program and genetic disease specific advocacy groups; compiling local referral lists; developing resource library; conducting needs assessments of genetic services within various settings (i.e., state funded maternal and infant care programs); and providing recommendations and technical assistance in all areas of genetics education. Applicants must have an MS in human genetics, an RN with clinical genetics experience, or an MPH with training in human genetics. Applicants must also have good organizational skills and motivation to initiate, implement, and evaluate projects. Part-time candidate will work approximately 18.75 hours per week, full health insurance coverage, prorated benefits, and a competitive salary. Please send curriculum vitae and references to: Sharon Reid, MS, Massachusetts Genetics Program, Massachusetts Department of Public Health, 150 Tremont Street, 2nd Floor, Boston, MA 02111, phone: (617) 727-5121.

Genetic Counselor: We are seeking a full-time genetic counselor. The position offers a varied experience, including counseling for birth defects, Mendelian and chromosomal disorders, teratogen exposure, maternal serum alphafetoprotein, and prenatal diagnosis counseling. There will be opportunities for clinical research. The position requires a master's degree in genetic counseling, and eligibility for certification as a genetic counselor with the American Board of Medical Genetics. An experienced counselor is preferred, but a recent graduate will be considered. Interested persons should send a curriculum vitae and a letter of interest to: Lester Weiss, MD, Medical Genetics and Birth Defects Center, Henry Ford Hospital, 2799 West Grand Boulevard, CFP-4, Detroit, MI 48202.

Genetic Associate: West Virginia University School of Medicine is seeking a full-time genetic associate. Duties include counseling patients with varied genetic conditions and coordinating follow-up, outreach clinics, and professional and community educational programs. A master's degree in genetics or related area and certified/board eligibility required; salary commensurate with experience and abilities. Please send vitae and three references to: Marybeth Hummell, MD, West Virginia Genetics Center, Department of Pediatrics, Morgantown, WV 26506, phone: (304) 293-7331.

Genetic Associate: The Prenatal Diagnostic Center, Inc., Lincoln, Massachusetts, has an immediate opening for an experienced, board certified/eligible genetic associate. The position offers the counselor an opportunity to assume significant responsibility in patient counseling and case management in a clinically-oriented service offering genetic counseling, an amniocentesis program, maternal serum alphafetoprotein screening, and cytogenetic laboratory services. Competitive salary and benefits are offered. Please contact: Christine E. Ford, P.O. Box 648, Lincoln, MA 01773, phone: (617) 259-1140.

Genetic Counselor: The Division of Genetics, Vanderbilt University School of Medicine, will have a position for an additional genetic counselor available July 1987. Responsibilities will include counseling patients and families in the genetics, neurogenetics, high-risk obstetric, hemophilia, and infertility clinics, and consultations seen at Vanderbilt University Hospital and outreach clinics. Participation in selected high school and other community education programs will be required. Applicants who are board eligible or certified in genetic counseling are preferred. Salary is commensurate with experience. Applicants should contact John A. Phillips, III, MD, Melinda Cohen, MS, or Janet Ulm, ACSW, Vanderbilt University School of Medicine, Division of Genetics, T-2404 Medical Center North, Nashville, TN 37232, phone: (615) 322-7601.

Genetic Associate: A research assistant position will be available 1 June 1987 in the Department of Human Genetics, Medical College of Virginia/Virginia Commonwealth University, for an individual with training as a genetic associate (MS). Responsibilities will be to assist in the direction of the antenatal genetic counseling program which will include scheduling of patients, counseling, and venipuncture. Skills in data entry and computing are desirable. Travel to referring hospitals and satellite clinics will be necessary. The associate will be responsible for the development of educational materials and programs for students, professionals, and patients. Formal training as a genetic associate is required and the successful applicant must be eligible for certification by the American Board of Medical Genetics. Interested applicants should submit their curriculum vitae and three references to: Walter Nancy, MD, Box 33 MCV Station, Richmond, VA 23298. VCU/MCV is an equal opportunity/affirmative action employer. Women and minorities are encouraged to apply.

Genetic Counselor: The genetics center, Children's Hospital Medical Center of Akron, is seeking a full-time genetic counselor with a master's degree in genetic counseling or human genetics. Candidate must be ABMG board eligible/board certified. This is a diversified position with responsibilities in organizing outreach clinics, prenatal counseling, hospital clinic consultative services, and public and professional education. The genetics center is part of an active statewide genetics network; the center has two medical geneticists, one counselor, and an education coordinator.

JOBS HOT-LINE
Linda Nicholson
P.O. Box 269
Wilmington, DE 19899
(302) 651-4234

CHMCA has an active cytogenetics laboratory, MSAFP program, as well as a metabolic testing laboratory. Excellent benefits and salary commensurate with experience. Interested applicants should contact: John R. Waterson, MD, PhD, Children's Hospital, Medical Center of Akron, 281 Locust Street, Akron, OH 44308, phone: (216) 379-8792.

Genetic Counselor. The University of Miami School of Medicine, Department of Pediatrics genetics program has a full-time, permanent position for a board certified/eligible genetic counselor. Applications are invited from individuals who have or anticipate having a master's degree in genetic counseling; bilingual (English/Spanish) applicants are preferred. Primary responsibilities include direct service (general genetics, prenatal diagnosis, teratology counseling, etc.) as well as education, outreach activities, and clinical research. Miami is a culturally diverse area and attracts patients locally as well as from the Caribbean, South America, and Central America. The diversity of ethnic backgrounds and large patient population provides unique opportunities for a rich experience in clinical and research genetics. Salary is commensurate with experience and ability to grow professionally. Please send curriculum vitae and the names of three references to: Helen Travers, MS, University of Miami School of Medicine, Mailman Center for Child Development (D-820), P.O. Box 016820, Miami, FL 33101.