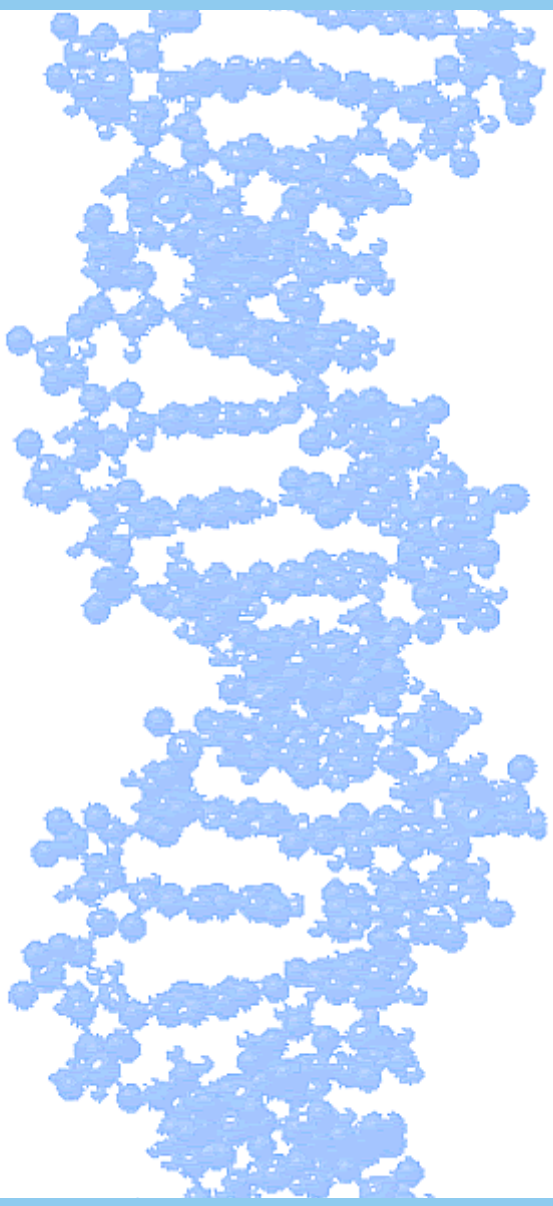
A Summary of the Results of the Medical Genetics Training Program Directors Survey, 2002

February 2003



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Preface

In order to better understand the dynamics affecting the supply and demand of medical geneticists in the United States, the Center for Health Workforce Studies at the School of Public Health, University at Albany, State University of New York is collaborating with the Center for Genetic Services and the Health Workforce, a group led by Judith Cooksey at the University of Maryland, Baltimore, on a 3-year project to examine the medical genetics workforce. The research aims of the group include describing the current and emerging genetic services models and the personnel involved; to assess the current practice of geneticists, genetic counselors, and nurses in genetics; to develop in-depth case studies of genetics services within communities around the country; to develop working relatioships with public and private organizations interested in genetics services; and to disseminate the findings of the project.

This report summarizes the results of a survey of medical genetics training program directors conducted in 2002. The results from this survey provide valuable, up-to-date information on the supply of new medical geneticists as well as demand for their services. This report complements the ongoing efforts to examine the medical genetics workforce.

The Center for Health Workforce Studies is dedicated to the collection, analysis, and distribution of health workforce data to assist health, professional and educational organizations, policy makers, and the public understand issues related to the supply, demand, and use of health workers. This report was prepared by Mark Beaulieu, Gaetano J. Forte, and Edward Salsberg.

The views expressed in this report are those of the Center for Health Workforce Studies and do not necessarily represent positions or policies of the School of Public Health, University at Albany, State University of New York, the Center for Genetic Services and the Health Workforce, the University of Maryland, Baltimore, the United States Department of Health and Human Services, the Health Resources and Services Administration (HRSA), the Bureau of the Health Professions, or the National Center for Health Workforce Analysis.

Partial funding for this report and the research that informs it was provided through a cooperative agreement with the HRSA.

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Summary of the Results of the Medical Genetics Training Program Directors Survey, 2002

Responses to the medical genetics training program directors survey in 2002 reveal a number of findings. First, according to program directors, medical genetics is viewed differently by medical residents depending on their specialty training. Medical genetics is viewed positively by pediatric and obstetrics/gynecology residents. However, medical genetics is viewed more neutrally by both pathology and internal medicine residents.

Second, program directors reported that demand for recent graduates of medical genetics training programs is high. The large majority of program directors reported that their graduates had no difficulties finding full-time employment.

Third, the job market appears to be softer around medical genetics training sites than in other geographic areas. Program directors report that while practice opportunities in areas close to their training sites do exist for new medical geneticists, they are much less abundant than in other areas of the country.

Key Findings

- A small percentage (9%) of the programs reported an increase in the number of trainees entering training between the 2001-02 and 2002-03 academic years. While most programs (67%) remained the same size between the 2001-02 and 2002-03 academic years, about a quarter (24%) of the programs decreased in size. While these results suggest an overall decrease in the number of medical genetics positions for the 2002-03 academic year, the results for the changes in program size between 2002-03 and 2003-04 indicate that there does not appear to be a trend towards decreasing positions. Only 7% of the program directors reported expecting a decrease in program size between the 2002-03 and 2003-04 academic years. Program directors were almost twice as likely to report an increase in the number of positions between 2002-03 and 2003-04 than they were for the 2001-02 and 2002-03 academic years.

- Equal percentages of program directors reported that there was an increase or a decrease in the number of applications between the 2001-02 and 2002-03 academic year. One in five (20%) program directors reported the same number of applications between the 2001-02 and 2002-03 academic years. However, there does appear to be a trend towards decreasing applications. Eighty-one percent (81%) of program directors predicted that they would receive fewer applications for the 2003-04 academic year than they did for the 2002-03 academic year.

- How medical genetics is viewed by medical residents also appears to differ by specialty. Program directors reported that pediatric residents had the most positive view of the specialty, while internal medicine residents had the least positive view of the specialty. The view of the specialty by the four specialty groups (pediatrics, obstetrics/gynecology, internal medicine and pathology) appears to be relatively constant over time. Pediatrics was the only specialty where more program directors reported that medical residents' view of medical genetics had improved than had remained the same.

- Almost three-quarters (71%) of the program directors reported that their graduates had no difficulties finding positions. The majority of program directors indicated that the job market would remain about the same for graduates in the 2002-03 academic year as it was for the 2001-02 academic year. This seems to indicate that the job market for medical genetics has been relatively constant and that the job market has not softened substantially.

- Medical genetics training program directors assess the national job market as much better than the job market within 50 miles of their training sites.

Results of the Medical Genetics Training Program Directors Survey, 2002

This section of the report is organized around a number of key, ongoing issues in medical genetics graduate medical education, including: trends in training program size, attractiveness of medical genetics as a subspecialty, and the experiences of recent medical genetics graduates in the job market.

Medical Genetics program directors are in a unique position to assess both changes in the job market and the attractiveness of the specialty to residents in pediatrics, internal medicine, obstetric/gynecology, pathology and other specialties. Program directors can also provide valuable insights on possible future changes in the training of medical geneticists. Thus, they are a good source of information on the aforementioned key issues in the graduate training of medical geneticists..

The Center received responses from 36 (77%) of the 47 active medical genetics training programs in the United States in 2002. For complete technical details on the survey of training program directors, please see Appendices A and B. The following sections analyze the responses to the 2002 survey of medical genetics training program directors.

1. Training Program Size

The majority (51%) of medical genetics training programs had 1 training position for the past academic year (2001-02) (Figure 1). Slightly less than 1 in 10 programs (9%) had no training positions, while the other 40% indicated that they had 2 or more training positions.

The number of positions is lower for the current academic year (2002-03) than for the past academic year (2001-02) (Figure 1). About a quarter (26%) of the program directors report that their programs have no positions (compared to 9% the previous year). Also, both the percentage of programs with 1 position and the percentage of programs with 2 or more positions decreased (from 51% to 40% for 1 position and from 40% to 34% for 2 or more positions). However, this does not appear to be a trend since the number of positions is expected to increase between the current academic year (2002-03) and the next academic year (2003-04). The percentage of programs anticipating no positions in 2003-04 is down from 26%

Figure 1. Number of Positions in Medical Genetics Training Programs, 2001-02 to 2003-04

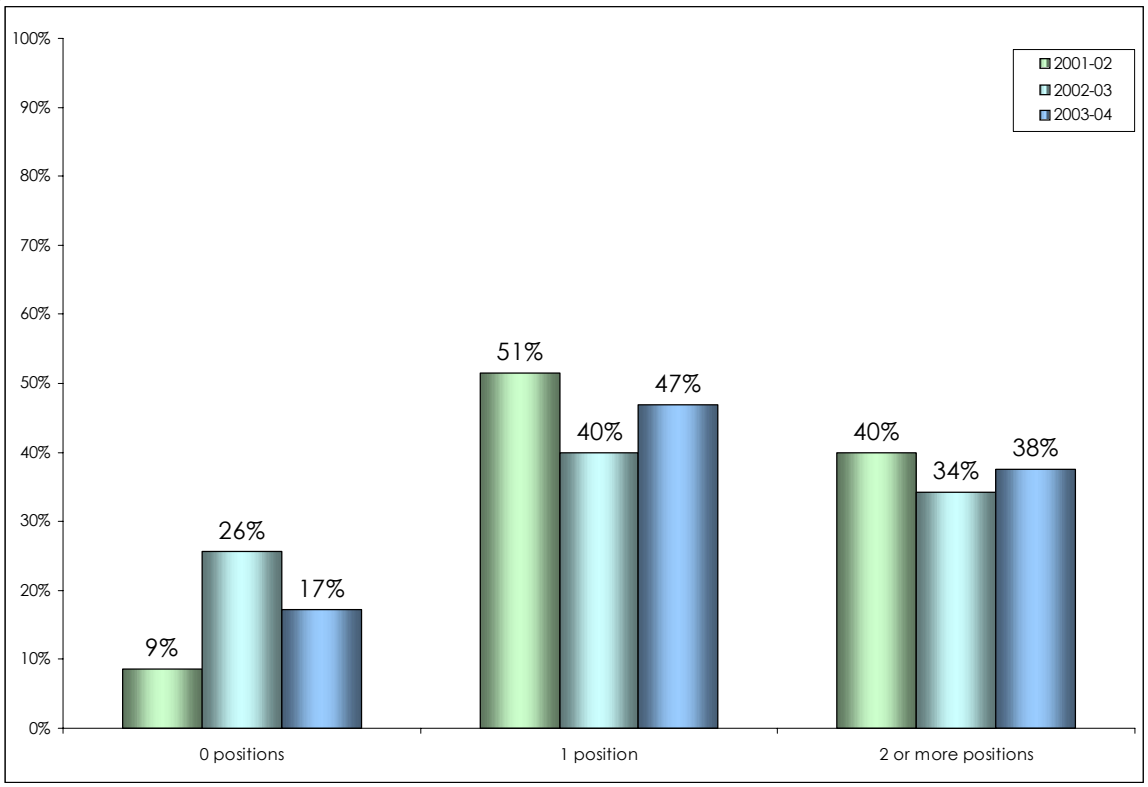


Figure 2. Applications for Medical Genetics Training Programs, 2001-02 to 2003-04

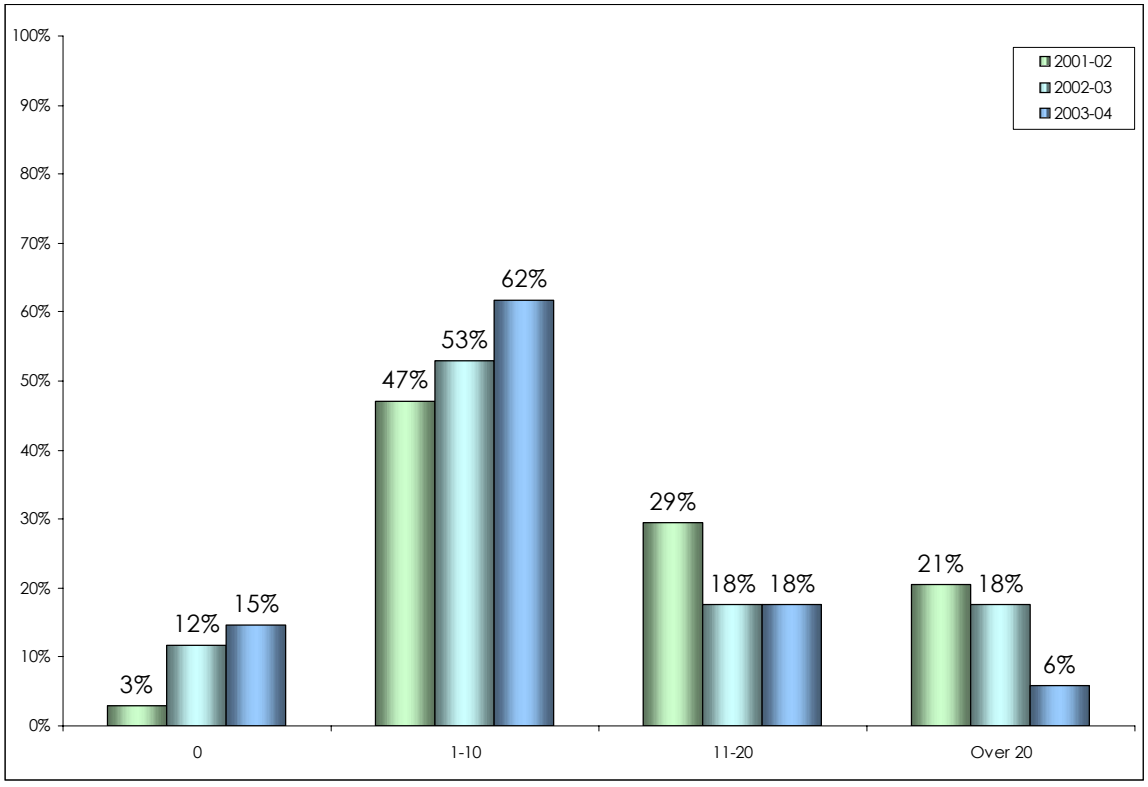


Figure 3. Percent Strong Candidates Among Applicants for Medical Genetics Training Programs, 2001-02 to 2003-04

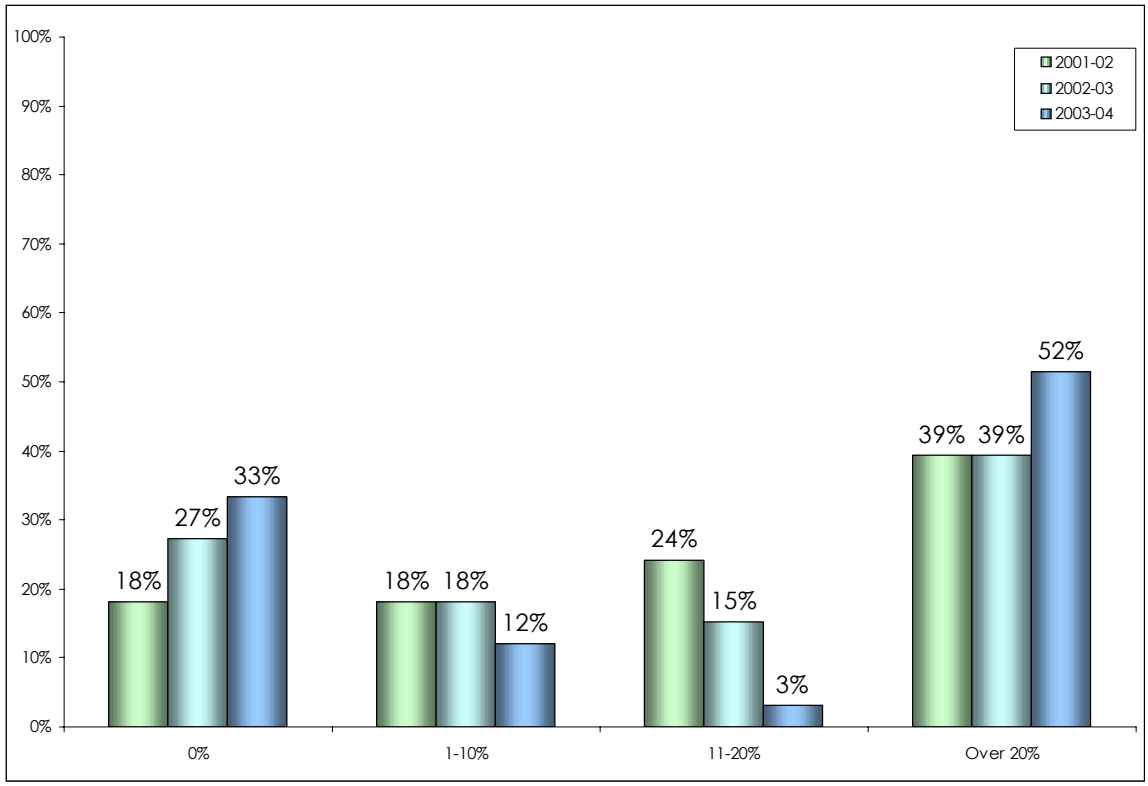
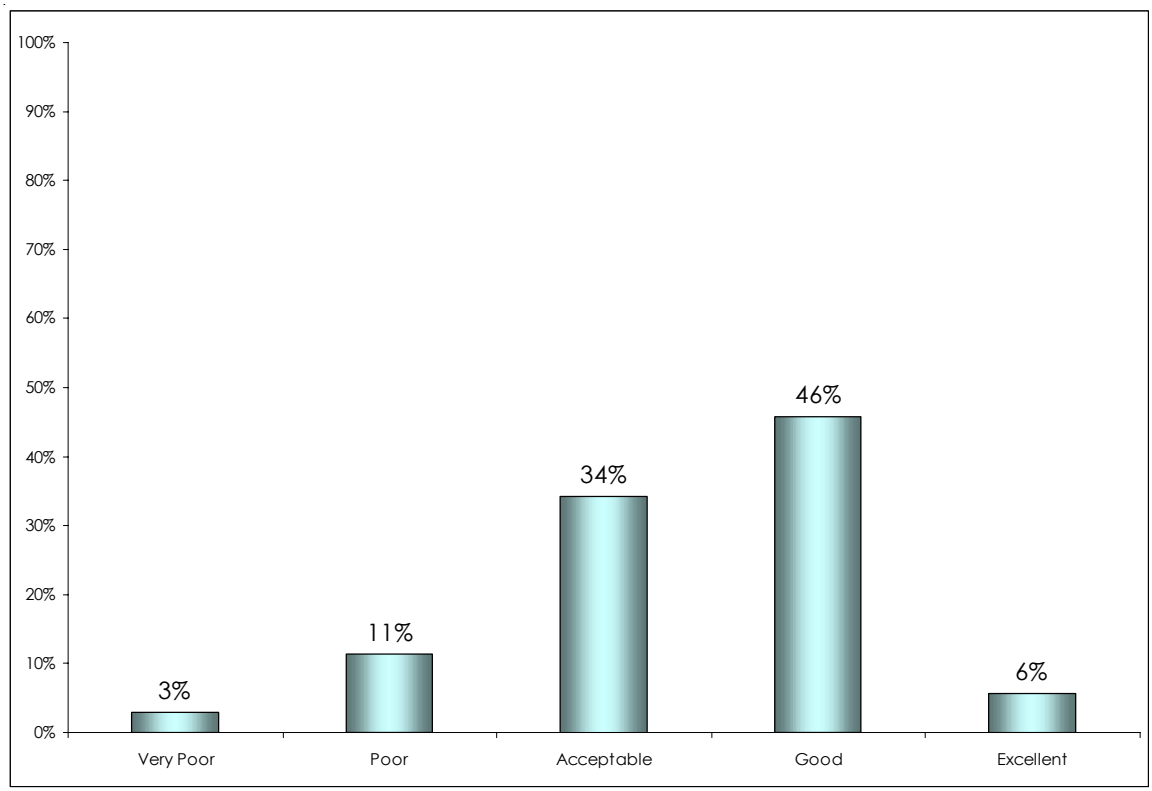


Figure 4. Qualifications of Applicants for Medical Genetics Training Programs, 2002-03



in 2002-03 to 17%. The number of program directors anticipating 1 position increased from 40% to 47% while the number of program directors anticipating 2 or more positions increased from 34% to 38%. Program directors indicated that fewer applications were received in the current academic year (2002-03: median = 10) than in the previous academic year (2001-02: median = 11). Over half (53%) of the program directors reported that their program had received 1 to 10 applications in 2002-03 (Figure 2). In 2001-02, 47% of the program directors stated that they had received 1 to 10 applications. Program directors were less likely to report receiving 11 to 20 and over 20 applications in 2002-03 (11-20: 18% and over 20: 18%) than in 2001-02 (11-20: 29% and over 20: 21%). Also, 12% of the programs reported receiving no applications for the 2002-03 academic year. Only 3% of the programs reported receiving zero applications for the 2001-02 academic year.

Program directors reported lower percentages of strong candidates for the 2002-03 academic year than for the 2001-02 academic year (Figure 3). Forty-five percent (45%) of the program directors reported that 0% to 10% of their candidates were strong candidates in the 2002-03 academic year. This represents a 9% increase over the 36% of program directors who stated that 0% to 10% of their candidates were strong candidates in the 2001-02 academic year. While similar percentages of program directors reported that over 20% of their applicants were strong candidates for both 2001-02 and 2002-03, program directors were 9% more likely to report that 11-20% of their applicants were strong in 2001-02 (24%) than in 2002-03 (15%).

A little over half (52%) of the program directors rated their applicants' qualifications as good or excellent (Figure 4). Fourteen percent (14%) of the program directors reported that their applicants were poorly or very poorly qualified. The remaining program directors (34%) reported that their applicants' qualifications were acceptable.

For all three academic years considered (2000-01, 2001-02, and 2002-03), trainees entering training in medical genetics were most likely to have had previous training in pediatrics (Table 1). Prior training in internal medicine was the second most common type of training for new trainees for all three academic years considered. Obstetrics/gynecology was the third most likely form of prior training for trainees entering training. There were no entering trainees with prior pathology training for the 2000-01 and 2001-02 academic years. Only one trainee with prior training in pathology was expected to enter training in 2002-03.

Not surprisingly, program directors were most likely to report that their graduating trainees had prior training in pediatrics (Table 2). Graduates from training programs were about equally likely to have prior training in internal medicine or obstetrics/gynecology.

Table 1. Prior Training of Trainees Entering Medical Genetics Training Programs, 2001-02 to 2003-04

Pediatric Fellows Entering Program	2000-01		2001-02		2002-03	
0	19	61%	18	58%	20	65%
1	7	23%	8	26%	8	26%
2	4	13%	3	10%	2	6%
3 or More	1	3%	2	6%	1	3%
Internal Medicine Fellows Entering Program						
0	26	84%	26	84%	24	77%
1	4	13%	4	13%	6	19%
2	1	3%	1	3%	1	3%
3 or More	0	0%	0	0%	0	0%
Obstetrics/Gyncecology Fellows Entering Program						
0	27	87%	30	97%	28	90%
1	4	13%	0	0%	3	10%
2	0	0%	1	3%	0	0%
3 or More	0	0%	0	0%	0	0%
Pathology Fellows Entering Program						
0	31	100%	31	100%	30	97%
1	0	0%	0	0%	1	3%
2	0	0%	0	0%	0	0%
3 or More	0	0%	0	0%	0	0%

Table 2. Prior Training of Trainees Completing Medical Genetics Training Programs, 2001-02 to 2003-04

Pediatric Fellows Completing Training	2000-01		2001-02		2002-03	
0	19	63%	21	70%	21	70%
1	7	23%	5	17%	4	13%
2	4	13%	3	10%	4	13%
3 or More	0	0%	1	3%	1	3%
Internal Medicine Fellows Completing Training						
0	27	90%	27	90%	25	83%
1	2	7%	2	7%	4	13%
2	1	3%	1	3%	1	3%
3 or More	0	0%	0	0%	0	0%
Obstetrics/Gynecology Fellows Completing Training						
0	27	90%	28	93%	29	97%
1	3	10%	2	7%	0	0%
2	0	0%	0	0%	1	3%
3 or More	0	0%	0	0%	0	0%
Pathology Fellows Completing Training						
0	29	97%	29	97%	29	97%
1	1	3%	1	3%	1	3%
2	0	0%	0	0%	0	0%
3 or More	0	0%	0	0%	0	0%

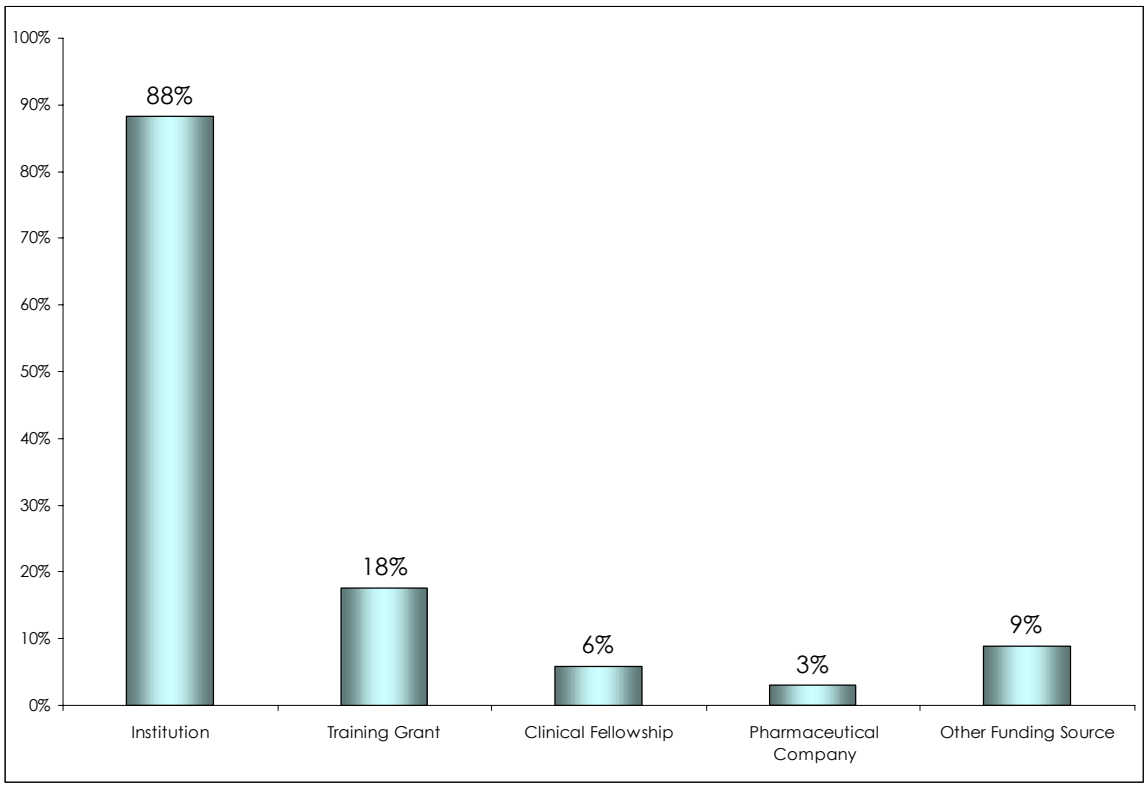
Finally, only 1 graduate in 2001-02 had prior training in pathology, while there were no graduates with prior pathology training in 2002-03 and one graduate expected in 2003-04.

2. Funding and Faculty

Figure 5 shows that the most common source of funding for trainees in medical genetics programs, according to program directors, was the institution itself (88%). Training grants were the second most likely source of funding (18%), but trainees were still considerably less likely to receive funding from a training grant than from the institution. Trainees also received funding from the following sources: clinical fellowships (6%), pharmaceutical company (3%), and other funding sources (9%).

Slightly more than 4 out of 10 (43%) program directors reported that the funding for their training program was poor or very poor (Figure 6). However, 34% of the program directors reported that the funding for their training programs was good or excellent. Finally, 23% of the program directors felt that the funding for their programs was acceptable.

Figure 5. Funding Sources for Medical Genetics Training Programs, 2002-03



While there was quite a bit of variation in the adequacy of funding for medical genetics training programs, there was very little variation in the change in funding. The vast majority (89%) of program directors reported that there had been no change in the funding for their programs (Figure 7). The other 12% of program directors were evenly split between reporting that the funding for their programs had decreased (6%) or increased (6%).

Every training program had full-time, paid faculty (Figure 8). Half (50%) of the medical genetics training programs had over 10 full-time, paid faculty. No program director reported that their program had more than 10 part-time, paid faculty, with 35% of the programs reporting 1 to10 part-time, paid faculty. Twelve percent (12%) of the program directors reported having 1 to 5 part-time, volunteer faculty. There were no program directors that reported having full-time, volunteers in their program. None of the programs reported that their program had more than 5 part-time, volunteers in their training program.

Figure 6. Adequacy of Funding for Medical Genetics Training Programs, 2002-03

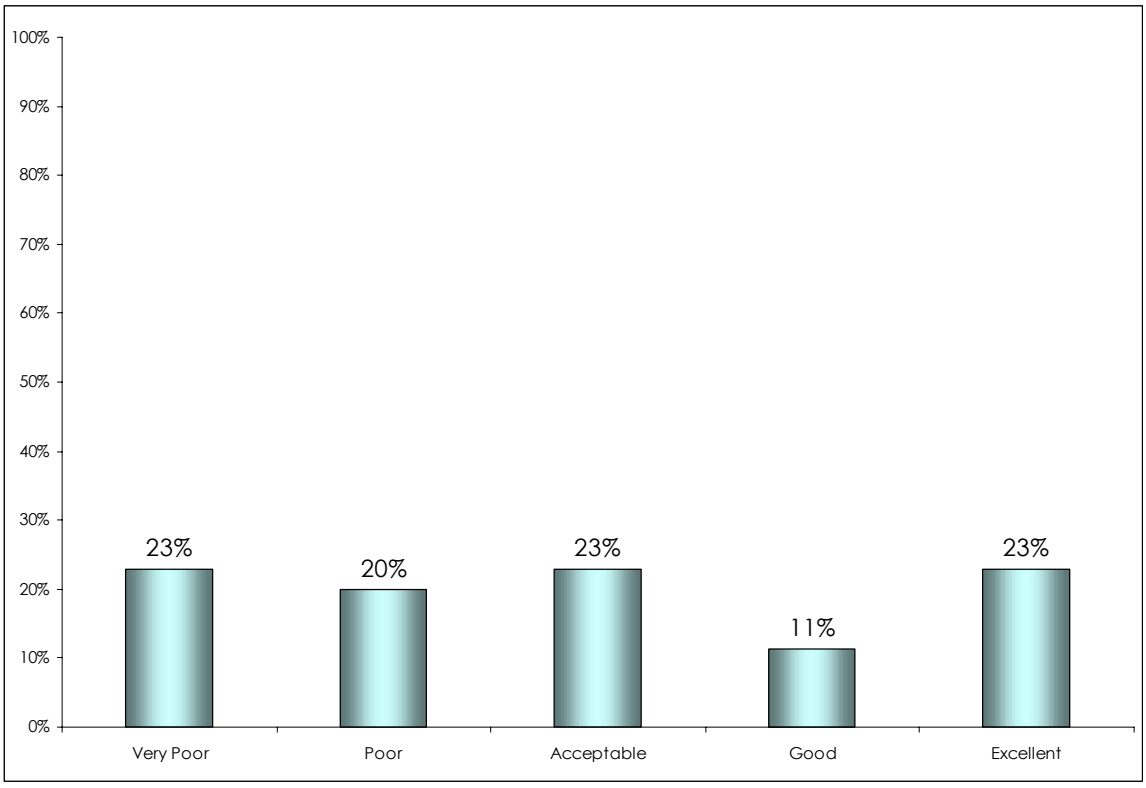
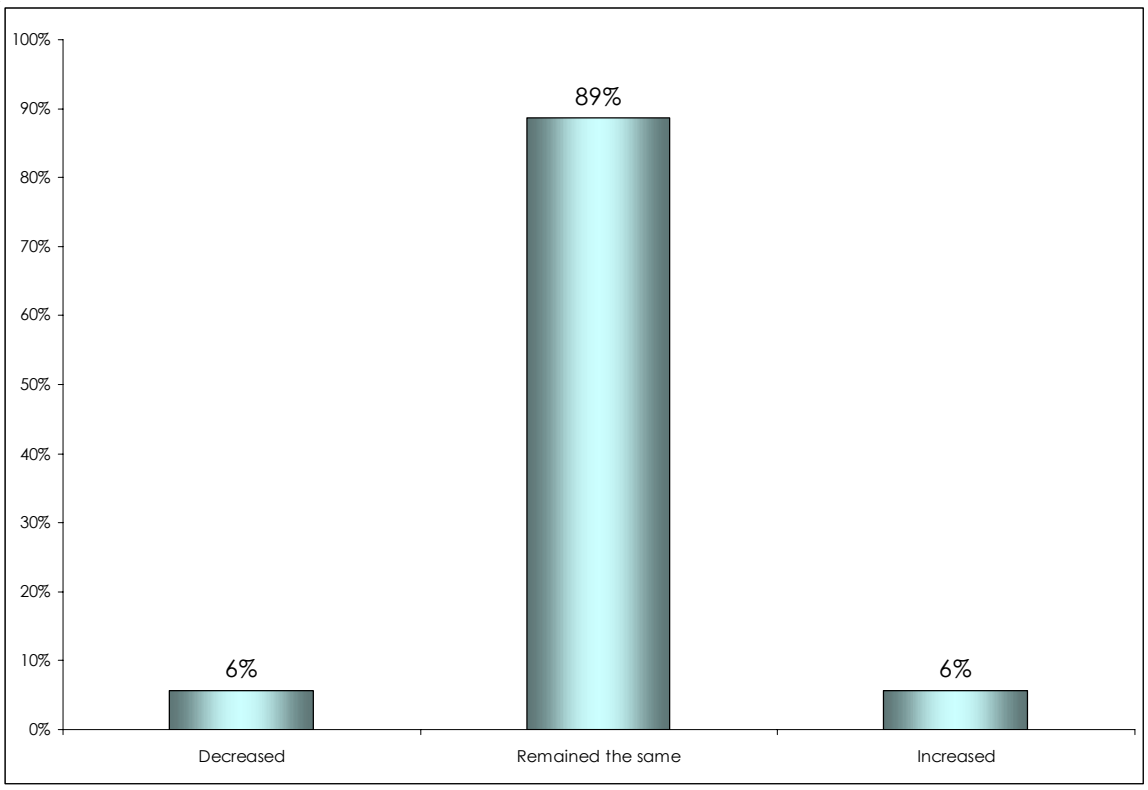


Figure 7. Change in Funding for Medical Genetics Training Programs, 2002-03



Slightly more than half (54%) of the program directors indicated that they had a difficult or very difficult time recruiting qualified faculty for their programs (Figure 9). Less than one in five (17%) reported that they had an easy or very easy time recruiting qualified faculty for their programs.

The median number of years program directors had spent in their position was 5 years. About one-fifth (21%) of the program directors plan to step down as the director of the program within the next 12 months (Figure 10). Over a third (35%) of the program directors plan on stepping down in 1 to 3 years. Twelve percent (12%) of the program directors reported that they planned to continue in their positions for at least 10 more years.

Figure 8. Number and Type of Faculty Utilized by Medical Genetics Training Programs, 2002-03

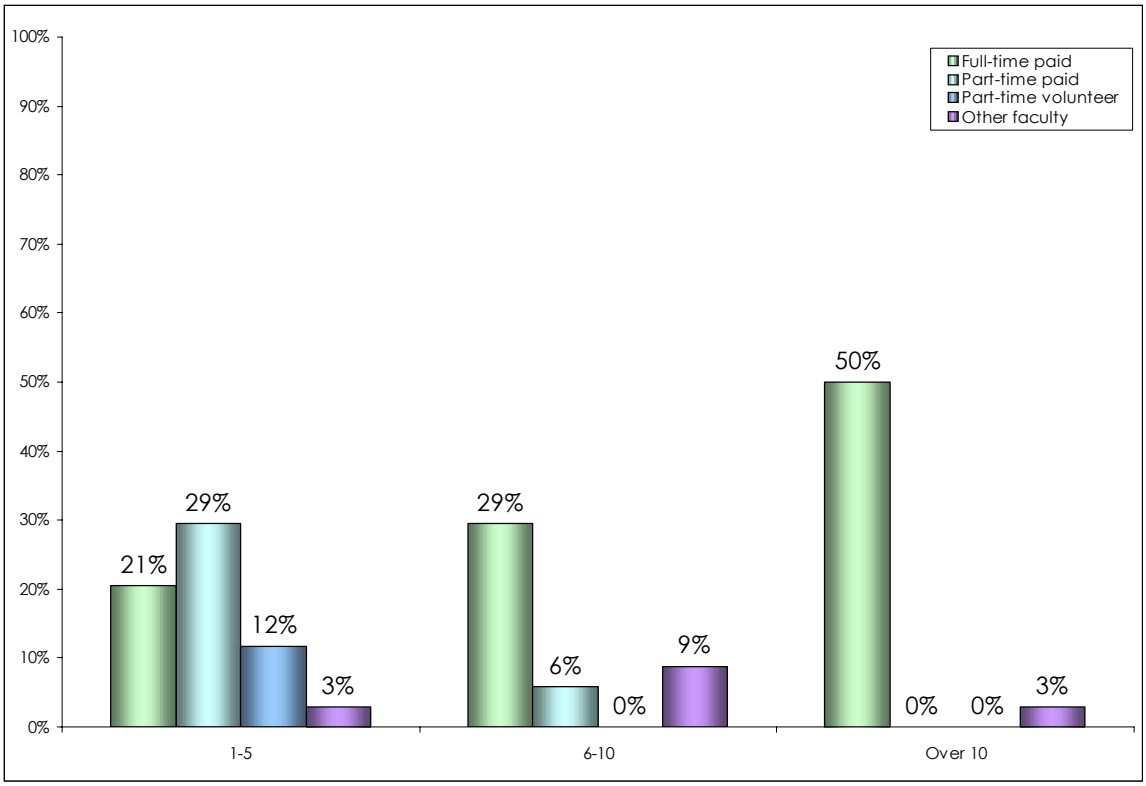


Figure 9. Faculty Recruitment Experience of Medical Genetics Training Programs, 2002-03

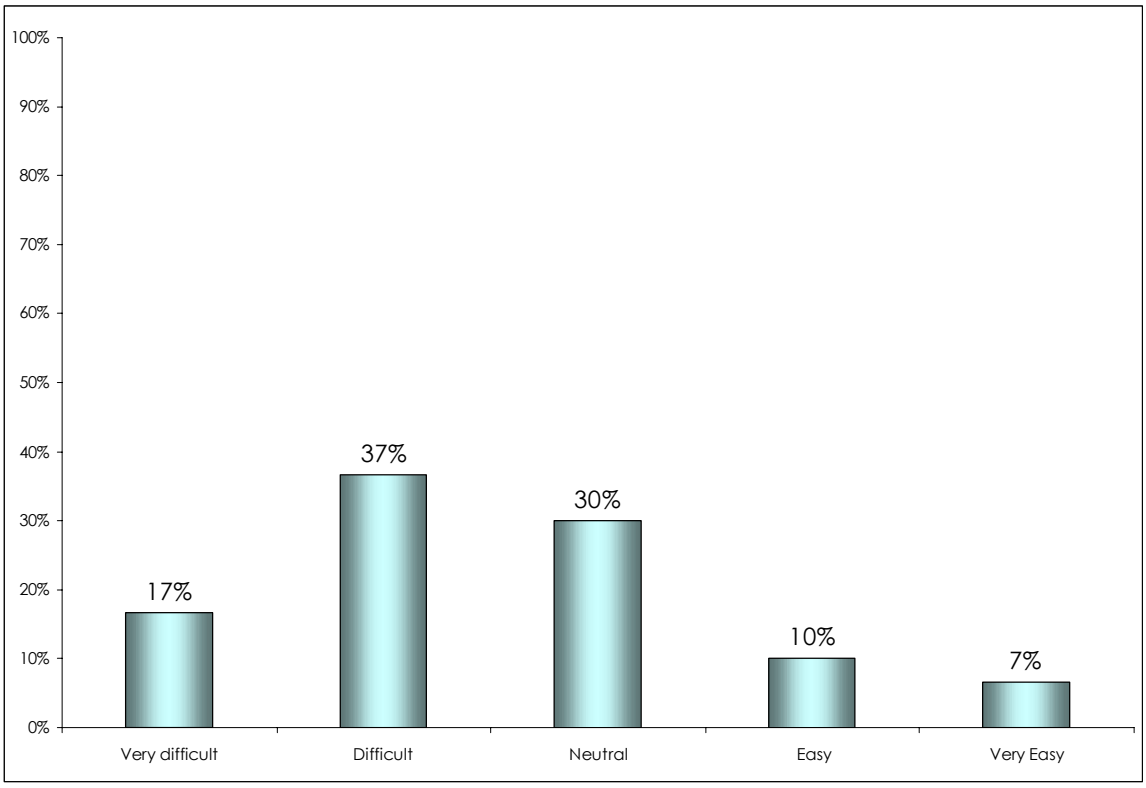
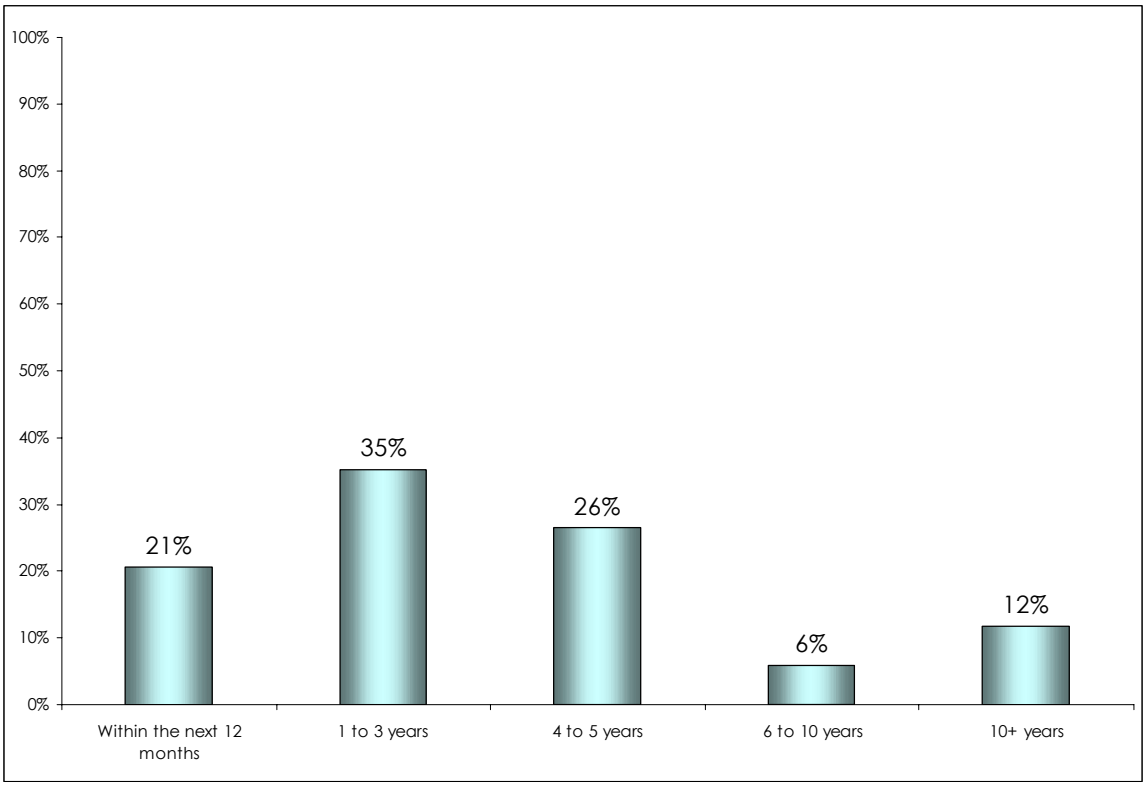


Figure 10. Retirement Plans of Medical Genetics Training Program Directors, 2002-03



3. Attractiveness of Medical Genetics as a Subspecialty

In the long term, the viability of medical genetics as a specialty depends, in part, on its ability to attract new, well-qualified physicians to the specialty. To become a medical geneticist, a physician must first choose to subspecialize, and then choose medical genetics over other subspecialties. Thus, it is important to understand how the specialty is viewed by medical residents who are still considering whether to subspecialize. Moreover, this understanding is crucial in developing strategies to encourage an increase in the number of well-qualified applicants to programs in order to increase production of new allergists.

For medical genetics, there are a variety of medical residents that need to be considered. In particular, the attitudes of pediatric, internal medicine, obstetrics/gynecology, and pathology residents are important. Program directors believed that pediatric residents had the most positive view of the medical genetics specialty with 77% of the program directors reporting that pediatric residents had a positive view of the specialty (Figure 11). Sixy-one percent (61%) of the program directors reported that obstetrics/gynecology residents view the specialty positively. Fifty-two percent (52%) of program directors believed that pathology residents had a positive view of the specialty. Finally, 35% of program directors reported that internal medicine residents had a positive view of the specialty. The specialty that the largest percentage of program directors believed had a negative view of the medical genetics specialty was internal medicine (23%). Ten percent or less of the program directors reported that the other specialties had a negative view of the specialty.

About half of program directors (Figure 12) believed that the view of the medical genetics specialty has improved among pediatric residents (53%) and obstetrics/gynecology residents (46%). Thirty-nine percent (39%) of program reported that the view of the specialty of medical genetics had improved among internal medicine residents, while 42% of the program directors, indicated that the view of the specialty had improved among pathology residents. There was no specialty (i.e., pediatrics, internal medicine, obstetrics/gynecology, and pathology) where over 10% of the program directors believed that the view of the specialty of medical genetics had become worse.

Figure 11. Medical Genetics Training Program Directors Assessment of the View of the Medical Genetics Subspecialty by Type of Prior Training

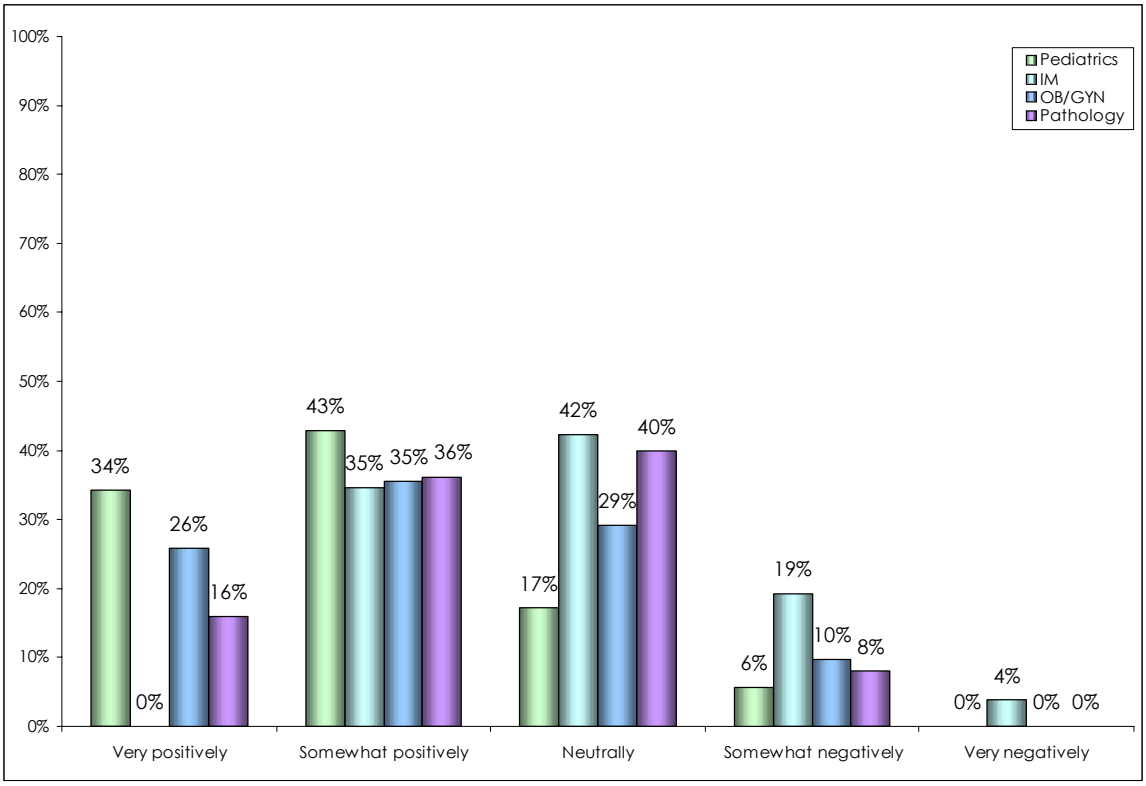
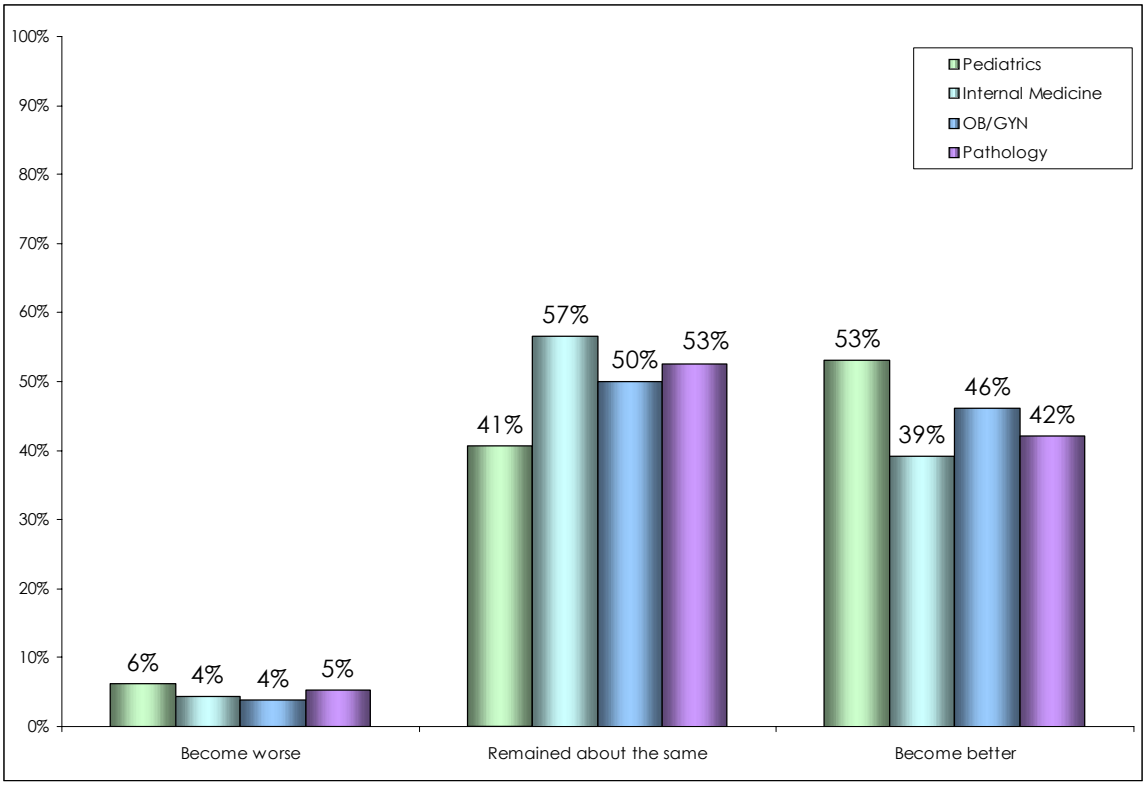


Figure 12. Perceived Change in the View of the Medical Genetics Subspecialty by Type of Prior Training



4. Recent Graduates' Experiences in the Job Market

Academic medical centers were the most common practice positions listed for new graduates in medical genetics over the last 5 years (Figure 13). About two-thirds (64%) of the program directors reported that 76 to 100% of their graduates obtained work in academic medical centers over the last 5 years. Fifteen percent (15%) of the program directors reported that 26 to 50% of their graduates obtained work in academic medical centers over the past 5 years. Of the other 4 practice positions (i.e., private practice, clinical laboratory, government/military, and other positions), 79% or more of the program directors reported that none of their graduates obtained work in those positions.

Most (71%) program directors reported that their graduates had no difficulties finding full-time employment in medical genetics (Figure 14). Only 5% of the program directors indicated that their graduates had many difficulties finding a full-time position and 24% of the program directors reported that their graduates had some difficulties finding full-time employment.

Figure 15 shows that a little more than six out of ten (61%) program directors indicated that the job market had remained about the same for the graduates from the past academic year (2000-01) to the current academic year (2001-02). Less than 1 in 10 (7%) reported that the job market had become worse for the recent graduates of medical genetics programs. Finally, 32% of the program directors believed that the job market had improved for recent graduates.

Program directors reported that the local job market was softer than the national job market (Figure 16). Over three-quarters (77%) of the program directors reported that there were few or no positions in the local job market compared to the 18% that reported few or no positions in the national job market. Forty-four percent (44%) of the program directors reported that there were a good number of positions in the national job market and 6% reported many positions in the national job market.

Figure 13. Practice Positions for Graduates of Medical Genetics Training Program Directors Over the Last 5 Years

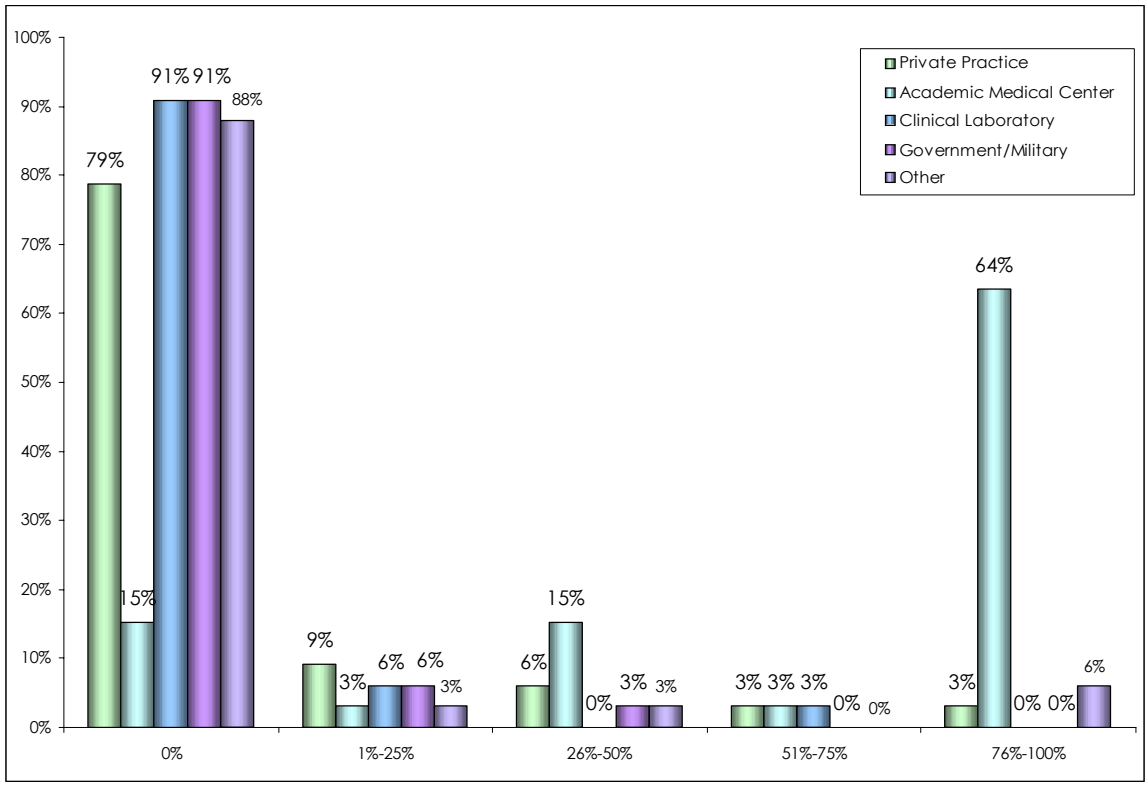


Figure 14. Medical Genetics Program Directors' Perceptions of Recent Graduates' Difficulty Finding Full-Time Employment Opportunities in Mecial Genetics, 2002

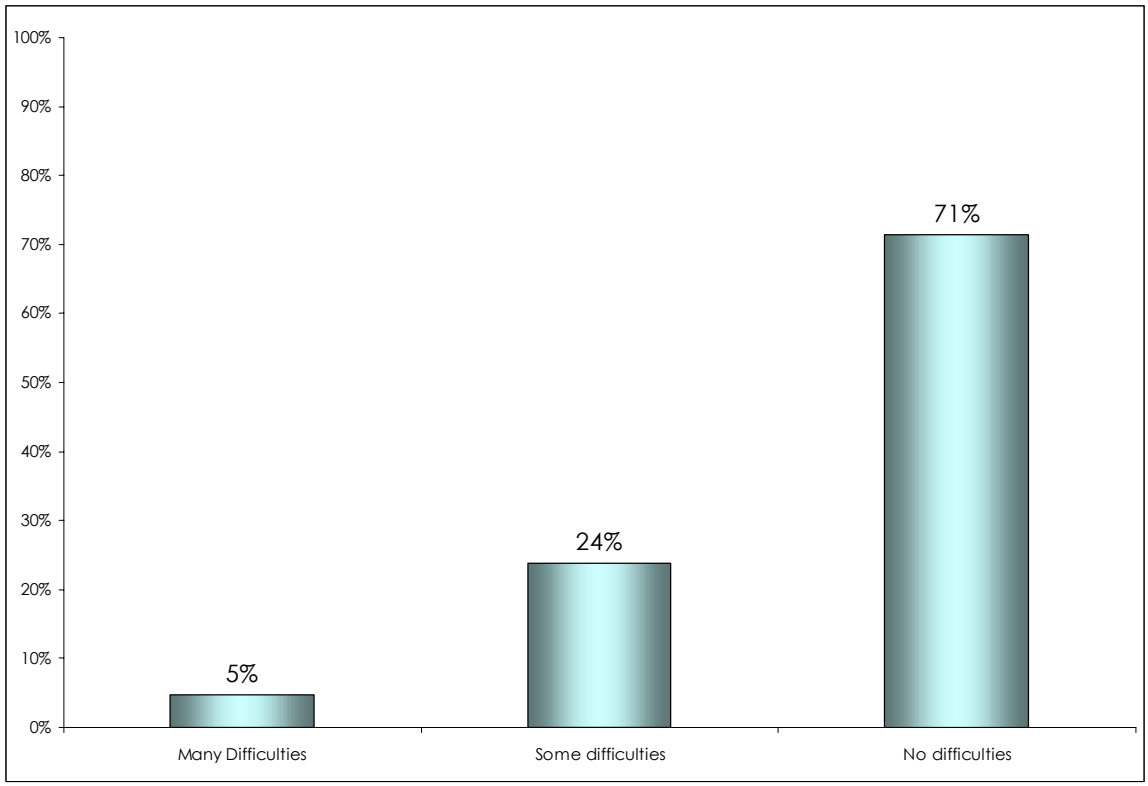


Figure 15. Medical Genetics Program Directors' Perceptions of Change in Job Market Opportunities for Current Academic Year Graduates Fellows Compared to Previous Academic Year Graduates, 2000-01 - 2001-02

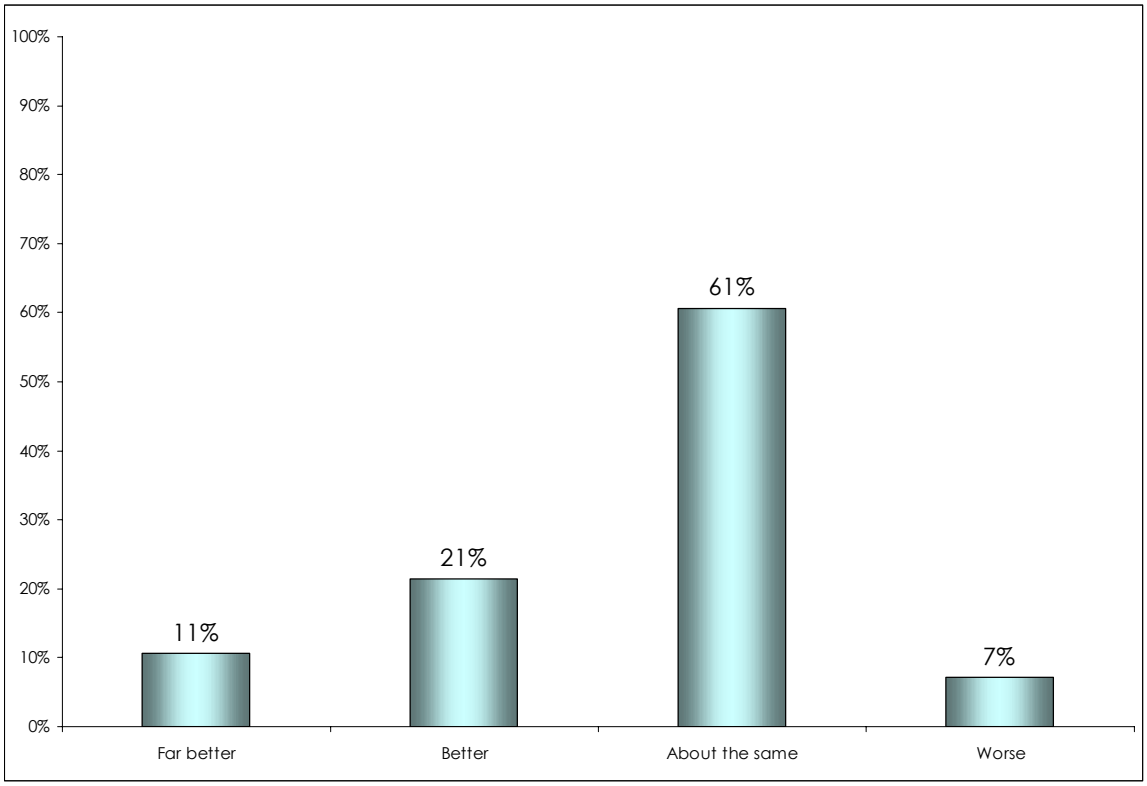
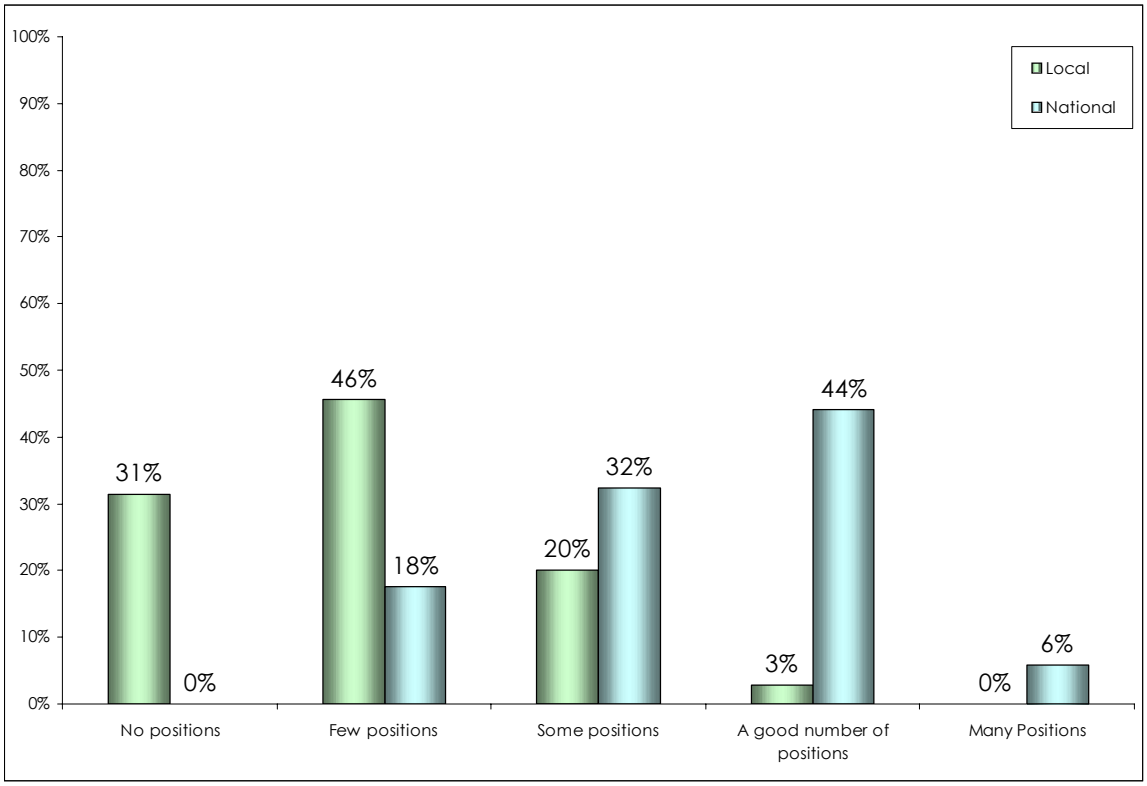


Figure 16. Medical Genetics Program Directors' Assessment of Practice Opportunities in Medical Genetics within 50 Miles of Their Training Site(s) and Nationally, 2002-03



Appendix A:
Medical Genetics Training Program Directors Survey, 2002 – Survey Instrument

2002 SURVEY OF DIRECTORS OF
MEDICAL GENETICS TRAINING PROGRAMS

Center for Health Workforce Studies
School of Public Health, University at Albany

This questionnaire is designed to obtain information on Medical Genetics training programs and practice opportunities for Medical Genetics trainees completing training in the U.S. Your response will be ***confidential*** and will be reported only in national and regional tabulations and summaries. A summary of the results of this survey will be available on the Center's website later this year (chws.albany.edu).
Please mark only one answer for each question unless otherwise directed.

A. MEDICAL GENETICS PROGRAM CHARACTERISTICS

1. Please indicate the number of available fellowship positions, applications received, and the percentage of strong applications during the following academic years:

Positions	Applications	% Strong Candidates	Academic Year
_____	_____	_____	2001-2002
_____	_____	_____	2002-2003
_____	_____	_____	2003-2004

2. Each year a new group of Medical Genetics trainees begins training. How many trainees began/will begin training in your program during the following academic years? Also, please indicate their previous training backgrounds.

Prior Training of Trainees Entering Training				Academic Year
Pediatrics	Internal Medicine	OB/GYN	Pathology	
_____	_____	_____	_____	2000-2001
_____	_____	_____	_____	2001-2002
_____	_____	_____	_____	2002-2003*

3. Each year a group of Medical Genetics trainees completes their training. How many trainees completed/will complete training in your program during the following academic years? Also, please indicate their previous training backgrounds.

Prior Training of Fellows Completing Training				Academic Year
Pediatrics	Internal Medicine	OB/GYN	Pathology	
_____	_____	_____	_____	2000-2001
_____	_____	_____	_____	2001-2002*
_____	_____	_____	_____	2002-2003*

* Please estimate the figures for future years to the best of your ability.

4. Please indicate the number of current fellows in training that receive funding from the following sources:

Source	Number of Trainees Funded
a) Institution	_____
b) Training grant	_____
c) Clinical fellowship	_____
d) Pharmaceutical company	_____
e) Other source, specify: _____	_____

5. How would you rate the **qualifications of applicants** to your program this year?
   - ○ Very poor
   - ○ Poor
   - ○ Acceptable
   - ○ Good
   - ○ Excellent

6. How would you rate the **adequacy of funding** for your program this year?
   - ○ Very poor
   - ○ Poor
   - ○ Acceptable
   - ○ Good
   - ○ Excellent

7. How would you describe the **change in funding** for your program this year?
   - ○ Substantially decreased
   - ○ Decreased
   - ○ Remained the same
   - ○ Increased
   - ○ Substantially increased

8. Please indicate the number and type of faculty currently in your program:

Type of Faculty	**Number of Faculty**
a) Full-time paid	_____
b) Part-time paid	_____
c) Full-time volunteer	_____
d) Part-time volunteer	_____
e) Other, specify: _____	_____

9. How would you describe your recent experience(s) recruiting qualified faculty for your program?
   - ○ Very difficult
   - ○ Difficult
   - ○ Neutral
   - ○ Easy
   - ○ Very easy

10. How do you think Medical Genetics is viewed by the following:

A) Pediatric Residents?
   - ○ Very positively
   - ○ Somewhat positively
   - ○ Neutrally
   - ○ Somewhat negatively
   - ○ Very negatively
   - ○ Unknown

B) Internal Medicine Residents?
   - ○ Very positively
   - ○ Somewhat positively
   - ○ Neutrally
   - ○ Somewhat negatively
   - ○ Very negatively
   - ○ Unknown

C) OB/GYN Residents?
   - ○ Very positively
   - ○ Somewhat positively
   - ○ Neutrally
   - ○ Somewhat negatively
   - ○ Very negatively
   - ○ Unknown

D) Pathology Residents?
   - ○ Very positively
   - ○ Somewhat positively
   - ○ Neutrally
   - ○ Somewhat negatively
   - ○ Very negatively
   - ○ Unknown

E) Other Residents, specify _____
- ○ Very positively
- ○ Somewhat positively
- ○ Neutrally
- ○ Somewhat negatively
- ○ Very negatively
- ○ Unknown

*F) Other Residents, specify*_____
- ○ Very positively
- ○ Somewhat positively
- ○ Neutrally
- ○ Somewhat negatively
- ○ Very negatively
- ○ Unknown

11. How do you think the views of pediatric and internal medicine residents about Medical Genetics have changed over the previous 3 years?

A) Pediatric Residents
- ○ Become worse
- ○ Remained about the same
- ○ Become better
- ○ Unknown

B) Internal Medicine Residents?
- ○ Become worse
- ○ Remained about the same
- ○ Become better
- ○ Unknown

C) OB/GYN Residents
- ○ Become worse
- ○ Remained about the same
- ○ Become better
- ○ Unknown

B) Pathology Residents?
- ○ Become worse
- ○ Remained about the same
- ○ Become better
- ○ Unknown

E) Other Residents, specify _____
- ○ Become worse
- ○ Remained about the same
- ○ Become better
- ○ Unknown

*F) Other Residents, specify*_____
- ○ Become worse
- ○ Remained about the same
- ○ Become better
- ○ Unknown

12. For how many years have you been the director of your program? ☐☐

13. When do you plan to step down as director of your program?
- ○ Within the next 12 months
- ○ 1 to 3 years
- ○ 10 + years
- ○ 4 to 5 years
- ○ 6 to 10 years

B. MEDICAL GENETICS JOB MARKET

1. Indicate the percentage of fellows graduating from your program in the past 5 years who found employment in the following types of positions:

☐☐☐ Private practice ☐☐☐ Academic medical center

☐☐☐ Clinical Laboratory ☐☐☐ Government/Military

☐☐☐ Other, specify: _____

2. Do you think that fellows who completed your training program during the 2000-2001 academic year experienced difficulties finding full-time employment opportunities in Medical Genetics?
- ○ Many Difficulties
- ○ Some Difficulties
- ○ No Difficulties
- ○ Don't Know

3. How do you anticipate the job market experiences of fellows who complete your training program during the current (2001-2002) academic year will compare to those who completed training during the previous (2000-2001) academic year?

- ○ Far better
- ○ Better
- ○ About the same
- ○ Worse
- ○ Far worse

4. What is your overall assessment of the practice opportunities **in Medical Genetics within 50 miles of your training site(s)**?

No Positions	Few Positions	Some Positions	A good number of positions	Many Positions
0	**1**	**2**	**3**	**4**
○	○	○	○	○

5. What is your overall assessment of the practice opportunities **in Medical Genetics nationally**?

No Positions	Few Positions	Some Positions	A good number of positions	Many Positions
0	**1**	**2**	**3**	**4**
○	○	○	○	○

6. Please provide any additional comments or observations you may have about your training program and/or the employment opportunities for Medical Genetics that cannot be captured from the questions above:

_____

_____

_____

_____

_____

THANK YOU FOR TAKING THE TIME TO HELP IN THIS STUDY!

Please return the completed questionnaire in the enclosed SASE to:

Center for Health Workforce Studies
School of Public Health, University at Albany
One University Place, Suite 200
Rensselaer, NY 12214-3456

If you have questions about the questionnaire or the study, please call the Center at 518-402-0250

Appendix B:
Medical Genetics Training Program Director Survey Technical Details

1. Definition of the Population

The Center defined the study as program directors of active, accredited medical genetics training programs in the United States. There are two groups that this definition excludes which could potentially generate new medical geneticists: 1) active programs outside the United States; and 2) non-accredited programs that train physicians. These exclusions, however, should not dramatically affect the results of the survey, as these sources have not accounted for very many medical geneticists historically. Focusing on the active, accredited medical genetics training programs, the main producers of new formally trained medical geneticists, is appropriate.

2. Mailing List Sources

The elements of the population of directors of medical genetics training programs were obtained from the *AMA Graduate Medical Education Directory, 2002-2003*. The list included 47 accredited medical genetics training programs that were currently active at the time of the survey (Summer 2002).

3. Survey Distribution Details

On August 6, 2002, each director was sent an e-mail announcing the training program director survey. In the e-mail, instructions were given indicating the procedures necessary to complete the surveys online. As an incentive to complete the program director survey each director was provided with a link to the Center's website where a summary of the survey's results will be stored.

A total of six follow-up e-mails were sent to the non-respondents between August 6, 2002 and October 17, 2002 that consisted of a reminder announcement of the program director survey with instructions indicating the procedures necessary to complete the survey online.

4. Response Rate Analysis

In all, 36 of the 47 active, accredited medical genetics training programs responded to the survey for a response rate of 77%. Twenty-nine (29) directors responded via the electronic version of the survey, while 7 responded via a paper version of the survey at their request.

Even though the Center received a 77% response rate on the program director survey, an examination of the representativeness of the sample was conducted. The only variable available for representativeness assessment was geographic location of the program. To determine whether survey response rates varied significantly across geographic locations, response rates were calculated for two sets of geographic areas: Census regions and divisions. Table 1 presents the survey response rates by geographic area within the United States as well as the results of the statistical tests to determine whether response rate differences were statistically significant. The Mountain Census division was the only Census division from which the Center did not receive a response. While there were only two medical genetics programs in the region, the lack of responses from the Mountain Census division caused a statistically significant difference between the population and the sample. Due to the small number of programs in the Mountain Census division, Census regions were examined for representativeness. Once Census regions are examined, there was no significant variation in response rate by region.

Geographical location of the program is only one potential source of bias in the survey. Unfortunately, there are little other data on non-responding programs available for analysis. Therefore, the responses were considered representative of the population, based on region, of medical genetics program directors and can be used for future analysis.

Table 1. Response Rate by Geographical Location, 2002 Training Program Director Survey

Geographic Location

Overall Response Analysis

	Rate	Population	Responses
Overall	77%	47	36

Census Divisions	Responses Frequency	Survey Population Frequency	Response Rate	t^{sig}
New England	8	6	75.0%	-0.10
Middle Atlantic	5	4	80.0%	0.17
East North Central	9	9	100.0%	1.62
West North Central	3	2	66.7%	-0.39
East South Central	2	2	100.0%	0.78
South Atlantic	8	5	62.5%	-0.85
West South Central	4	3	75.0%	-0.07
Mountain	2	0	0.0%	-2.40*
Pacific	6	5	83.3%	0.37

Census Regions	Responses Frequency	Survey Population Frequency	Response Rate	t^{sig}
Northeast	13	10	76.9%	0.02
North Central	12	11	91.7%	1.16
South	14	10	71.4%	-0.39
West	8	5	62.5%	-0.85