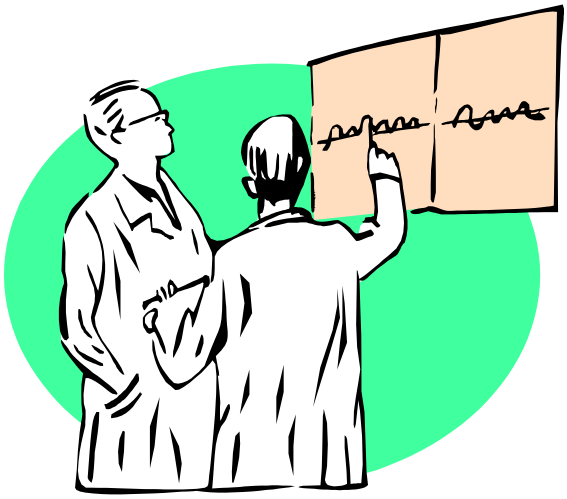
Final Report
State Genetics Survey, Kansas



September 2007

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This project was sponsored by the Kansas Department of Health and Environment in collaboration with the University of Kansas Medical Center.

This survey was conducted by the Kansas Department of Health and Environment Division of Health, Center for Environmental Statistics, Office of Health Assessment.

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Table of Contents

List of Tables

List of Tables (cont'd)

Executive Summary

The role of the physician in providing basic genetic medicine is growing and medical genetics issues are becoming increasingly important to medical practice. Although there are specialists in medical genetics, it is reported that there are not enough specialists to meet the growing demand for genetic medicine[1]. Physicians recognize that they have a role in explaining medical genetics to patients and discussing with them the impact of genetics on health outcomes[2], Physicians need current information in order to carry out their role.

To address the growing need for genetics information and assure adequate continuing education opportunities are available to physicians, a study was undertaken to determine current status and perceived need. This project was sponsored by the Kansas Department of Health and Environment (KDHE) in collaboration with the University of Kansas Medical Center (KUMC). The survey was conducted by KDHE Office of Health Assessment (OHA). Funding for the project was obtained through a federal Health Research Services Administration (HRSA)/Maternal Child Health Block (MCHB) Grant, to the 8 State Heartland Genetics Consortium at the University of Oklahoma Health Science Center. Primary care physicians were asked to complete and return a questionnaire intended to gather data about the demand for genetics services and the need for continuing education either by mail or via Internet (see Appendix A for a copy of the cover letter signed by the State health officer and the survey distributed on May 10, 2007). Survey analysis was completed on August 31, 2007. Of the 2,506 surveys distributed, the return rate was 33.8%. Summarized below are findings from the survey categorized by question type:

GENERAL QUESTIONS

- The surveys were completed by experienced mainly clinical primary care medical doctors licensed by the Kansas State Board of Healing Arts.

CLINICAL QUESTIONS

- Although most of the physicians surveyed do not see patients with identified genetics problems or make genetically related referrals, of those who do, an average number of three patients were referred by clinical primary care physicians over the last 12 months.
- Most clinical physicians are aware of genetics referral resources. In some cases, funding can be a barrier to referral.

ADMINISTRATIVE QUESTIONS

- Among primary care physicians with administrative responsibilities, most felt that genetics issues will have little impact on medical services provided in their

[1] Greendale, K., Pyeritz, R., Empowering primary care health professionals in medical genetics: How soon? How fast? How far? Am J Med Genet, 2001; 106:223-32.
[2] Watson, E., Austoker, J., Lucassen, A. A study of GP referrals to a family cancer clinic for breast/ovarian cancer. Fam Pract, 2001; 18: 1313-4.

practices. Administrative physicians (57%) felt that the major impact might be felt in the next 10 years. Just under a fourth of administrative physicians have plans to include genetics services in their medial practices over the next 5 or 10 years.

INFORMATIONAL SOURCES

- The most common sources of information about questions related to medical genetics are Internet, textbooks and to ask a colleague.
- Most responding physicians have made referrals for genetics services. Referrals were commonly made to the University of Kansas Medical Center (KUMC) and Children's Mercy Hospital, although several other sources were mentioned.

OB, OB/GYN AND FAMILY PRACTICE QUESTIONS

- Among the survey sample, 43.5% had a practice specialty of OB, OB/GYN or Family Practice. The most frequent referral sources used were KUMC, various sites in Wichita, Children's Mercy Hospital and St. Luke's Perinatal Center. A few respondents used out-of-state locations like Denver Presbyterian or Obstetrix Medical Group, and a few others.
- If genetic services counselors are available, the three types of services physicians thought could be provided to meet patient needs are genetic counseling for families, diagnostic workup, and genetics clinic for referrals.

CORD BLOOD BANKING QUESTIONS

- The majority (n=627, 75.7%) of responding physicians have not received training on umbilical cord collection and maintenance for cord blood banking purposes.
- Among the physicians who indicated that they had received training on cord blood maintenance and banking (n=111), 28 (25.2%) of the physicians had a need additional training.
- Just 13.2% of the physicians provide education to their patients regarding public and/or private cord blood banking.

CONTINUING EDUCATION QUESTIONS

- Over the last 12 months, approximately 50% of the responding physicians have participated in no continuing education related to medical genetics, however 37.4% of the physicians have received between 1 and 4 hours of training.
- If continuing education is provided, the top three educational categories of interest are "Genetics of specific conditions", Basic "Genetics 101", and "Ethical and legal issues of genetics".
- The top three best methods for delivering continuing education are Self Study Training Manual, Interactive CD-ROM on computer, and One day conference on the week-end.
- If genetics continuing education is offered in the physician's area, just under half of the respondents might attend (n=385). Most of the physicians who are interested in attending specialize in family practice and internal medicine.

COMMENTS

- Most primary care physicians provided no opinion about the role of the State Health Department relating to genetics issues. However, an estimated 11% of those who provided comment support the State taking responsibility for education, support and provision of genetics counseling. Another 10% of the respondents expressed the opinion that the State should have a role in genetics issues.
- Among the few additional comments that were received, most were positive in nature stating that genetics issues are critical in nature, that there is a need to expand related services, that geneticists are retiring and that additional specialists and programming in this area are needed. Overall general comments offered regarding the possible development of a state genetics program are positive in nature.

POLICY AND PROGRAM IMPLICATIONS:

1. Make genetics resource information available to the general public and to all primary care physicians, counselors or other medical providers via circulars, program materials and on the Internet.

2. Coordinate assistance to physicians so that they can include genetics service planning in their medical practices.

3. Distribute information about services that can be provided by genetics counselors to physicians, providers and the public via circulars, program materials and on the Internet.

4. Prepare information on cord blood banking and make it available via circulars and the Internet for physicians, providers and the public.

5. Provide continuing education courses on “Genetics of Specific Conditions”, “Basic Genetics 101”, and “Ethical and Legal Issues of Genetics” via self-study training manuals, interactive CD-ROM, conveniently located one-day weekend conferences and via the Internet.

Final Report
State Genetics Survey Project
September 1, 2007

Introduction

The role of the physician in providing basic genetic medicine is growing and medical genetics issues are becoming increasingly important to medical practice. Although there are specialists in medical genetics, it is reported that there are not enough specialists to meet the growing demand for genetic medicine[1]. Physicians recognize that they have a role in explaining medical genetics to patients and discussing with them the impact of genetics on health outcomes[2]. Physicians need current information in order to carry out their role.

To address the growing need for genetics information and assure adequate continuing education opportunities are available to physicians, a study was undertaken to determine current status and perceived need. This project was sponsored by the Kansas Department of Health and Environment (KDHE) in collaboration with the University of Kansas Medical Center (KUMC). The survey was conducted by KDHE Office of Health Assessment (OHA). Funding for the project was obtained through a federal Health Research Services Administration (HRSA)/Maternal Child Health Block (MCHB) Grant, to the 8 State Heartland Genetics Consortium at the University of Oklahoma Health Science Center. Primary care physicians were asked to complete and return a questionnaire either by mail or via Internet about the demand for genetics services and the need for continuing education (see Appendix A for cover letter and survey).

Methodology

A cover letter signed by the Director of Health, and a short survey were distributed on May 10, 2007 with analysis completed on August 31, 2007. Physicians with designated specialties of General Practice, Family Practice, Internal Medicine, OB/GYN, or Pediatrics (see Table 1) and a license status of Active, Exempt, Federal, or Military (see Table 2) were identified as primary care physicians to be surveyed (see Appendix B for definition of license statuses). A cover letter and the survey documents were mailed to 2,506 primary care medical doctors (MDs) on May 10, 2007.

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[1] Greendale, K., Pyeritz, R., Empowering primary care health professionals in medical genetics: How soon? How fast? How far? Am J Med Genet, 2001; 106:223-32.

[2] Watson, E., Austoker, J., Lucassen, A. A study of GP referrals to a family cancer clinic for breast/ovarian cancer. Fam Pract, 2001; 18: 1313-4.

Table 1: Sample Physician Specialty Distribution

Specialty	Frequency	Percent
Family Practice	913	36.4
General Practice	99	4.0
Internal Medicine	900	35.9
OB/GYN	212	8.5
Pediatrics	382	15.2
Total	2,506	100.0

Table 2: License Status Distribution

Status	Frequency	Percent
Active	2,195	87.6
Exempt	248	9.9
Federal	61	2.4
Military	2	0.1
Total	2,506	100.0

Physicians included in the sample were identified as having primary care specialties from the most current Health Resource Survey or licensure form submitted to the Kansas State Board of Healing Arts through the renewal process. Most physicians listed primary care specialties as their first specialties, but some had primary care specialties as second or third practice specialties (see Table 3).

Table 3: Practice Location for Specialty Identification

Location Number	Frequency	Percent
Specialty 1	2,081	83.0
Specialty 2	376	15.0
Specialty 3	49	2.0
Total	2,506	100.0

Of the surveys distributed, 847 responses were received for a response rate of 33.8% (see Table 4). Physicians with Active and Federal license statuses had the highest return rates. In excluding Exempt and Military respondents from the return rate calculation, the rate increased only to 34.8%. Since this exclusion had little impact, all license statuses were retained for analysis.

Table 4: Survey Return Rates by License Status

	Survey Return Status		
Status	No	Yes	Total
Active	1,430 (65.1%)	765 (34.9%)	2,195 (100.0%)
Exempt	185 (74.6%)	63 (25.4%)	248 (100.0%)
Federal	42 (68.9%)	19 (31.1%)	61 (100.0%)
Military	2 (100.0%)	0 (0.0%)	2 (100.0%)
Total	1,659 (66.2%)	847 (33.8%)	2,506 (100.0%)

Within this subset, 19 physicians returned surveys as refusals due to work status (see Table 5). Although these physicians responded, they did not complete surveys

and thus were excluded from analysis. In reviewing comments submitted via return surveys and in talking with some of these physicians, it became clear the reason for the refusal to complete the survey was due to the fact that they did not feel the survey applied to them due to their work status. This reduced the overall response rate to 33.8%.

Table 5: Survey Refusals Due to Work Status

Work Status	Frequency	Percent
Full-time	1	5.3
Locum Tennens	1	5.3
Not OB	1	5.3
Not Practicing	1	5.3
Part-Time	1	5.3
Retired	14	73.7
Total	19	100.0

In reviewing the records, 49 physicians did not provide information about administrative/clinical status, so the analysis was limited to the remaining 779 physicians. For both Administrative and Clinical primary care physicians, the greatest portion of respondents were of Active status and either family practice or internal medicine specialists (see Table 6).

Table 6: Cross-tabulation of Physicians by Clinical/Administrative Status, Specialty and License Status

	License Status			
	Active	Exempt	Federal	Total
Administrative				
Family Practice	8 (66.7%)	4 (33.3%)	0 (0.0%)	**12 (100.0%)**
General Practice	4(57.1%)	3 (42.9%)	0 (0.0%)	**7 (100.0%)**
Internal Medicine	8 (61.5%)	3 (23.1%)	2 (15.4%)	**13 (100.0%)**
OB/GYN	1 (100.0%)	0 (0.0%)	0 (0.0%)	**1 (100.0%)**
Pediatrics	8 (88.9%)	1 (11.1%)	0 (0.0%)	**9 (100.0%)**
Subtotal	**29 (69.0%)**	**11 (26.2%)**	**2(4.8%)**	**42 (100.0%)**
Clinical				
Family Practice	276 (95.8%)	9 (3.1%)	3 (1.0%0	**288 (100.0%)**
General Practice	24 (96.0%)	1 (4.0%)	0 (0.0%)	**25 (100.0%)**
Internal Medicine	196 (92.5%)	5 (2.4%)	11(5.2%)	**212 (100.0%)**
OB/GYN	74 (98.7%)	0 (0.0%)	1 (1.3%)	**75 (100.0%)**
Pediatrics	134 (97.8%)	2 (1.5%)	1 (0.7%)	**137 (100.0%)**
Subtotal	**704 (95.5%)**	**17 (2.3%)**	**16 (2.2%)**	**737 (100.0%)**
Total	**733** (94.1%)	**28** (3.6%)	**21** (2.7%)	**779 (100.%)***

*rounding error

Among these primary care physicians, most returned their surveys by mail (see Table 7). Just 7.1% returned their surveys via Internet, although this was a possibility for all physicians. Through the follow-up process, an additional 20.4% returned

surveys by fax and 4.2% provided their information over the phone (see Table 7). Similar proportions for method of return were found among administrative and clinical physicians.

Table 7: Method for Returning Mailed Surveys

Method	Frequency	Percent
Fax	159	20.4
Mail	531	68.2
On-line	55	7.1
Phone	34	4.4
Total	779	100.0

Survey follow-up began June 4, 2007 for outstanding surveys and was completed July 24, 2007. A variety of methods were used to follow-up with physicians who had not yet returned their surveys. For those physicians for whom an email address was available, reminder emails were sent requesting the physician to complete and return the survey that had been sent previously by mail or to go on-line and complete the survey. For those with available fax numbers, a fax cover sheet was composed requesting that the survey be completed and returned. This was faxed along with an additional copy of the survey. For physicians without fax numbers or email addresses, correspondence requesting survey completion and return was drafted and mailed along with a second copy of the survey. While awaiting the receipt of surveys, follow-up telephone calls were initiated to those physicians for whom phone numbers were available. For those physicians with no practice hours in the designated primary specialties or of exempt status, there was no follow-up due to the number of physicians with these characteristics who communicated that the survey did not apply to them as they were no longer working in the field or were of retired status (see Table 8). The largest proportion of surveys were received as a result of the first mailing. Faxing a second round of surveys was the most successful survey follow-up method. Follow-up mailings, phone calls, and emails produced similar results, with emails producing the smallest percentage of surveys returned. The overall survey return rate was 33.8% (not including refusals) and each follow-up method contributed to the return rate.

Table 8: Collection Method Results*

Method	Frequency	Method Total	Percent
First Mailing	587	2506	23.4
Second Mailing	17	132	12.9
Third Mailing	1	8	12.5
Phone Calls	34	316	10.8
Email	17	205	8.3
Fax	175	965	18.1

*Success frequencies for collection is estimated since in some cases multiple follow-up methods were employed. Unaccounted for follow-up methods total 16.

Results

Survey findings are summarized below and categorized by question type:

GENERAL SECTION:

Questions 1 & 2 (All): How many years have you been in medical practice?

- The average number of years worked among those who responded to the survey and completed question 1 (n=809) was 20.86 years. For clinical physicians (n=727) the average number of years was 19.95, while for administrative physicians (n=41) it was 28.54 years. Primary care physicians who didn't provide information about whether they are clinical or administrative (n=41) worked an average of 29.34 years.

CLINICAL SECTION:

Question 3: Approximately how many patients do you currently have in your practice with a known or a suspected genetic disorder?

- Although physicians were requested to complete question 3 only if their primary responsibilities were clinically based, several administrative physicians provided information. Administrative physicians (n=5) reported an average of 7.6 patients.
- Clinical physicians (n=651) reported an average of 27.5 patients with known or suspected genetic disorders.
- Physicians not indicating clinical care or administrative status (n=25) reported a mean of 8.7 patients.
- Physicians with primary responsibilities of clinical, administrative and unidentified responsibilities most commonly reported number of patients with a known or a suspected genetics disorder.

Question 4: Within the past 12 months, approximately how many patients have you referred to a genetic specialist for any type of genetic service?

- Among 707 primary care physicians with primary responsibility of clinical care, the mean number of patients referred to a genetic specialist for any type of genetic service within the last 12 months was 2.8. When those physicians were not considered who had made no referrals, the mean rose to 5.9 patients referred. This translates to about 2,000 referrals per year from responding physicians.
- The most common number of referrals per physician was 0 (n=364), while the maximum number of patients referred within the past 12 months was 100.
- Data are missing for 4.1% (n=30) of the primary care physicians with clinical care responsibilities.

Question 5: Do you know of a clinical genetics referral source?

- About two-thirds of clinical care physicians know of a clinical genetics referral source (n= 493, 66.9%).
- Just under one-third of clinical care physicians do not know of a clinical genetics referral source (n=229, 31.1%).
- Data are missing for 2.0% (n=15) of the clinical care physicians who returned surveys.

Question 6: In working with patients and families, has the lack of a payment source for medical genetic services been a barrier to access to these services?

- Of the primary clinical care MDs, 28.4% (n=209) stated that lack of a payment source is Never a barrier to access of medical genetics services.
- Of the primary clinical care MDs, 38.8% (n=287) stated that lack of a payment source is Sometimes a barrier to access of medical genetics services.
- Of the primary clinical care MDs, 7.2% (n=53), stated that a lack of a payment source is Always a barrier to access of medical genetics services.
- Of the primary clinical care MDs, 23.6% (n=174), stated that a lack of a payment source is N/A as a barrier to access of medical genetics services
- Data are missing for 1.9% (n=14) of the primary clinical care MDs who returned surveys.

Question 7: Has the issue of lack of a payment source for medical genetic services prevented you from making a referral to the genetic service?

- Of the primary clinical care MDs, for 50.5% (n=372), the issue of lack of a payment source for medical genetic services Never prevented them from making a referral to the genetic service.
- Of the primary clinical care MDs, for 22.1% (n=163), the issue of lack of a payment source for medical genetic services Sometimes prevented them from making a referral to the genetic service.
- Of the primary clinical care MDs, for 2.7% (n=20), the issue of lack of a payment source for medical genetic services Always prevented them from making a referral to the genetic service.
- Of the primary clinical care MDs, for 23.2% (n=171), the issue of lack of a payment source for medical genetic services is N/A in preventing them from making a referral to the genetic service.
- Data are missing for 1.5% (n=11) of the primary clinical care MDs who returned surveys.

ADMINISTRATIVE SECTION:

Question 8: How much impact do you think medical genetics will have on your practice?

Table 9: Cross-tabulation of the Impact of Medical Genetics on Medical Practice for Administrative Primary Care Physicians

	No Impact	Little Impact	Major Impact	No Response
Currently	19.0%	57.1%	11.9%	11.9%
In the next 5 years	11.9%	31.0%	38.8%	19.0%
In the next 10 years	11.9%	11.9%	57.1%	19.0%

- Of the 42 responding administrative physicians, 19.0% thought that genetics will have no impact on their practices, while 57.1% of respondents felt that there

would be little impact, and just 11.9% thought that medical genetics would have a major impact on their practice (see Table 9).

- Respondents thought that medical genetics would impact their practices more strongly in the next 5 years, and even more strongly in the next 10 years.
- Missing data may be important to interpretation of responses to this question.

Question 9: Are you planning to include genetic services in your practice?

Table 10: Cross-tabulation of Plans to Include Genetic Services in Medical Practices

	Yes	No	No Response
Currently	16.7%	64.3%	19.0%
In the next 5 years	23.8%	47.6%	28.6%
In the next 10 years	26.2%	45.2%	28.6%

- Of the 42 responding administrative physicians, most are planning to include genetic services in their practices over the next 5 and 10 years. For the most part primary care administrative physicians do not plan to include genetic services in their practices (see Table 10).
- Data are missing for between about a fourth of the physicians who identified their primary responsibilities as administrative.

SECTION ON WHERE TO FIND ADDITIONAL INFORMATION:
Question 10: Currently, if you have a question related to medical genetics, where are you most likely to go to find additional information? (Check only one answer.)

Table 11: Location of Information Related to Medical Genetics

Number	Percent	Source
253	30.6	Internet
208	25.1	Text book
85	10.3	Ask a colleague
69	8.3	Ask a genetic counselor
60	7.2	Journal articles
56	6.8	Ask a genetic service
52	6.3	Not Answered
39	4.7	Other source
34	4.1	Other source, specified
5	0.6	None
1	0.1	Drug company info

- The most popular source of information related to medical genetics is the Internet (n=253, 30.6%) followed by text books (n=208, 25.1%) (see Table 11).
- There were 52 missing data responses to this question (6.3%).
- For the "other, specify" column, responses varied widely, but the most frequent responses were to contact KUMC or consult medical genetics sources.

Question 11: Have you ever referred any of your patients to a genetic service for any type of genetics services? (Check one.)

- Most physicians have referred patients to genetic services (n-=527, 63.6%).
- Patients are referred frequently to Children's Mercy Hospital, KUMC, St. Luke's Hospital, and Wesley Medical Center, among others. A number of respondents commented that they previously made referrals to Dr. Cho who is now retired.
- For those primary care physicians who had not made referrals previously (=241), responses varied. Most were "unsure" (n=58), but other respondents made referrals to KUMC, and Children's Mercy Hospital, and a wide variety of other resources.

SECTION ON OB, OB/GYN AND FAMILY PRACTICE QUESTONS:
Question 12: Is your practice specialty OB, OB/GYN or Family Practice?

- The greatest number of primary care physicians did not have a practice specialty of OB, OB/GYN or Family Practice (n=394, 47.6%).
- A smaller number of MDs had a practice specialty of OB, OB/GYN or Family Practice (n=360, 43.5%).
- Data are missing for 8.9% of the respondents being reviewed (n=74).

Question 13: When you have an abnormal prenatal genetic testing, where do you refer patients for further follow-up?

- Of all responding MDs, 40.0% (n=331) provided a response to this question.
- Patients are most frequently referred to KUMC (n=57), various sites in Wichita (n=42), Children's Mercy Hospital (n=13), and St. Luke's Perinatal Center (n=10). A few respondents refer to out-of-state services such as Denver Presbyterian or Obstetrix Medical Group (n=3), Texas Tech in Amarillo (n=1), and University of Oklahoma Medical Center (n=1). A number of respondents no longer do OB, make referrals, or feel that genetics problems are not applicable to their practices. Respondents named a number of physicians and other professionals to whom they make referrals like Dr. John Evans of Topeka (n=15), Dr. Cho of Wichita (n=4), Dr. Margaret O'Hara of Wichita (n=18), Dr. Lutz (n=1), Dr. Roberts (n=1), Dr. Romeo (n=1), Dr. Issa (n=1), Dr. Chesa (n=1), Ms. Rebecca Reddy (n=1) and Ms. Lisa Butterfield (n=1).

Question 14: If genetic services counselors were available to you, what types of services could they provide to meet your patients' needs? (Check all that apply.)

Table 12: Type of Services that Could Be Provided by Genetic Services Counselors

Rank	Number	Percent	Response Category
1	272	76.9	Genetic counseling for families
2	233	64.7	Diagnostic workup
3	210	58.3	Genetics clinic for referrals
4	180	50.0	Clinical management
5	143	39.7	Continuing education (grand rounds)
6	80	22.2	Genetic consultation only
7	46	12.8	Not answered
8	13	3.6	Other
	8	0.24	Other, Specify

- Among physicians who had a practice specialty of OB, OB/GYN or Family Practice, if genetic services counselors were available, the top three services that they could provide would be Genetic counseling for families, Diagnostic workup, and Genetics clinic for referrals. Clinical management and Continuing Education (grand rounds) were also frequently selected. No suggestions were offered for other services that could be provided by genetic services counselors.
- No response was received from 46 physicians (12.8%) whose practice specialties were OB, OB/GYN or Family Practice.

SECTION ON CORD BLOOD BANKING:
Question 15: Have you received training in umbilical cord collection and maintenance for cord blood banking purposes?

- Just 13.4% (n=111) of the respondents have received training in umbilical cord collection and maintenance for cord blood banking purposes.
- The majority of MDs have not received training (627, 75.7%)
- Data are missing for 10.9% (n=90) of the returned questionnaires.

Question 16: If your response to Question #15 is yes, please indicate your training needs in cord blood collection and maintenance.

- Of the 111 respondents who have received training in umbilical cord collection and maintenance for cord blood banking purposes, 28 (25.2%) need additional training.
- Data on additional training needs are missing for 4.5% (n=5) of the respondents who had already received some training.

Question 17: Do you currently provide education to your patients regarding public and/or private cord blood banking?

- Just 13.2% (n=109) of the MDs responding to this question provide education to their patients regarding public and/or private cord blood banking.
- Most physicians do not provide training of this nature to their patients (n=606, 73.2%).
- Data are missing for 13.6% (n=132) of the respondents.

SECTION ON CONTINUING EDUCATION:
Question 18: Within the past 12 months, estimate the number of Continuing Education (CE) hours you received on any subject related to medical genetics? (Check one.)

Table 13: Hours of Medical Genetics Continuing Education Received Over the Last 12 Months

Number	Percent	Category
410	49.5	0 hours
310	37.4	1-4 hours
45	5.4	5-8 hours
8	1.0	9-24 hours
10	1.2	25+ hours
45	5.4	Not Answered

- The largest proportion (n=410 49.5%) of respondents within the past 12 months have had no hours of continuing education related to medical genetics (see Table 13).
- 45.0% of primary care physicians reported 1 - 25+ hours of training in medical genetics.
- Data are missing for 5.4% (n=45) of the respondents.
- More than half of OB/GYN and Pediatric physicians have received between 1 and 4 hours of continuing education on any subject related to medical genetics. Just under a third of Family Practice and Internal Medicine specialists have received between 1 and 4 hours of continuing education on any subject related to medical genetics within the last 12 months. Most Family Practice, General Practice and Internal Medicine physician respondents have received no training related to medical genetics within the past 12 months (see Table 14).

Table 14: Range of Continuing Education Hours Within the Last 12 Months by Specialty

Category		Family Practice	General Practice	Internal Medicine	OB/GYN	Pediatrics	Total
0 hours	Count	186	28	135	20	41	410
	% within pc specialty	58.7	75.7	57.0	23.8	26.8	49.5
1-4 hours	Count	96	5	72	50	87	310
	% within pc specialty	30.3	13.5	30.4	59.5	56.9	37.4
5-8 hours	Count	13		8	7	17	45
	% within pc specialty	4.1		3.4	8.3	11.1	5.4
9-24 hours	Count	3		4	1		8
	% within pc specialty	0.9		1.7	1.2		1.0
25+ hours	Count		2	3	1	4	10
	% within pc specialty		5.4	1.3	1.2	2.6	1.2
[Not Answered]	Count	19	2	15	5	4	45
	% within pc specialty	6.0	5.4	6.3	6.0	2.6	5.4
TOTAL	Count	317	37	237	84	153	828
	% within pc specialty	100	100	100	100	100	100

Question 19: If CE were provided, what topical areas related to genetics do you think would most help you? (Check ALL that apply.)

Table 15: Ranking of Continuing Education Topical Areas Related to Genetics

Rank	Number	Percent	Category
1	505	56.9	Genetics of specific conditions
2	389	43.9	Basic "Genetics 101"
3	314	35.4	Ethical and legal issues of genetics
4	282	31.8	Public health issues of genetics
5	149	16.8	Not Answered
6	41	4.6	Clinical nursing aspects of genetics
7	38	4.3	Other
	26	2.9	Other, specified

- The top three continuing education categories that would be most helpful to respondents are Genetics of specific conditions, Basic "Genetics 101", and Ethical and legal issues of genetics (see Table 15).
- Some of the topics of possible interest include: cancers, clinical genetics as applied to practice, genetics for the primary care physician/pediatrician, genetics in allergy, genetics related to pediatric cardiology, implications of family genetics on planning, insurance related to genetic testing and right of the patient, nutria-genomics, obstetric diagnosis of the fetus, and recognition of genetic abnormalities in adults and tandem mass spectrometry.
- Data are missing for 10.9% (n=90) of the respondents.

Question 20: If CE of topical areas in genetics were offered, what is the best method for obtaining the education? (Select your TOP THREE choices.)

Table 16: Best Method for Obtaining Continuing Education

Rank	Number	Percent	CE Category
1	303	36.6	Self Study Training Manual
2	303	36.6	Interactive CD-ROM on computer
3	258	31.2	One day conference on week-end
4	226	27.3	Evening conference
5	223	26.9	One day conference during the week
6	202	24.4	Short in-service lecture sessions
7	75	9.1	Not Answered
8	94	11.4	Videotapes
9	59	7.1	Other
	50	6.0	Other, specified

- The top three preferences for obtaining continuing education are: Self Study Training Manual, Interactive CD-ROM on computer, and One-day conference on the week-end (see Table 16).
- Of the "other, specified" methods (last line of Table 16) for obtaining continuing education, On-line/Internet based training courses were the most frequently mentioned (n=14). Other methods include annual conference meetings, noon meetings/conferences, monographs, journals, grand rounds, and CD/DVDs.
- Data are missing for 9.1% (n=75) respondents.

COMMENT SECTION:

Question 21: If genetics CEs were available in your area, how likely would you be to attend? (Check one.)

Table 17: Likelihood of Attending Genetics Continuing Education

Number	Percent	Category
385	46.5	I might attend
220	26.6	Very Likely
133	16.1	Not Very Likely
68	8.2	I would not attend
22	2.7	Not Answered

- The largest proportion of respondents might attend (n=385, 46.5%) or are very likely to attend (n=220, 26.6%) if genetics CEs were available in their areas. A smaller portion of respondents are not very likely to attend (n=133, 16.1%) or would not attend (n=68, 8.2%) if genetics CEs were available in their area.
- Data are missing for 2.7% (n=66) of the respondents (see Table 17).

Table 18: Likelihood of Attending
Genetics Continuing Education by Specialty

		Family Practice	General Practice	Internal Medicine	OB/GYN	Pediatrics	TOTAL
I might attend	Count	153	12	110	39	71	385
	% within pc specialty	48.3	32.4	46.4	46.4	46.4	46.5
I would not attend	Count	28	4	28	5	3	68
	% within pc specialty	8.8	10.8	11.8	6.0	2.0	8.2
Not very Likely	Count	44	6	48	9	26	133
	% within pc specialty	13.9	16.2	20.3	10.7	17.0	16.1
Very Likely	Count	83	13	44	29	51	220
	% within pc specialty	26.2	35.1	18.6	34.5	33.3	26.6
[Not Answered]	Count	9	2	7	2	2	22
	% within pc specialty	2.8	5.4	3.0	2.4	1.3	2.7
	Count	317	37	237	84	153	828
TOTAL	% within pc specialty	100	100	100	100	100	100

- It appears that there is a fairly even distribution among those primary care physicians who might attend or are very likely to attend genetics based continuing education (see Table 18).

Table 19: Likelihood of Attending by Practice Focus

		Administra-tive	Clinical care	Not Answered	Total
I might attend	Count	18	347	20	385
	% within Q2	42.9	47.1	40.8	46.5
I would not attend	Count	7	50	11	68
	% within Q2	16.7	6.8	22.4	8.2
Not very Likely	Count	4	128	1	133
	% within Q2	9.5	17.4	2.0	16.1
Very Likely	Count	11	202	7	220
	% within Q2	26.2	27.4	14.3	26.6
[Not Answered]	Count	2	10	10	22
	% within Q2	4.8	1.4	20.4	2.7
	Count	42	737	49	828
	% within Q2	100	100	100	100

- In reviewing responses by practice focus, it appears that about 40% of each of the respondents might attend genetics based continuing education (see Table 19). Clinical care physicians appear most likely to attend (n=202, 27.4%).

Question 22: What is your opinion about the role of the State Health Department relating to genetics issues?

Surveyed MDs were asked their opinions about the role of the State Health Department relating to genetics issues. Of those that returned completed surveys for analysis:

- 384 (46.4%) primary care physicians provided no comment,
- 91 (11.0%) support the State taking responsibility for education, support, and provision of counseling
- 83 (10.0%) expressed the opinion that the state should have a genetics issue role
- 60 (7.2%) were unsure what the State's role should be
- 59 (7.1%) had no opinion
- 47 (5.7%) supported neonatal screening
- 30 (3.6%) provided unresponsive comments
- 18 (2.2%) thought the State should have no role
- 17 (2.1%) thought the State should have a limited role related to genetics issues
- 17 (2.1%) sent comments relating to the State's role of developing and financing of genetic programs
- 11 (1.3%) thought the State should function in a regulatory role
- 11 (1.3%) felt that the State should serve in a data gathering/statistical role

Question 23. Any additional comments?

- Among the few additional comments were the following: "Resources might better be utilized elsewhere", "Less government means more for all", "Genetics are a drop in the bucket compared to more important issues," "Why is this now such a hot topic and couldn't resources be better spent", and "Why are we spending tax dollars on this relatively unimportant aspect of health care?"(n=5).
- In comparison, many (n=51) respondents stated that genetics issues are critical in nature. There is need to expand related services. Geneticists are retiring so that services are becoming increasingly scarce. Additional training and education is needed. Some of these are listed below:
    - "Genetics are a small but vital part of medical practice."
    - "Genetics problems are increasing. Prevention would be in the best interest."
    - We should be testing for most diseases like our neighboring states."
    - We have geneticists in Kansas City, but it might take 2 – 5 months to get an appointment."
    - "Kansas should increase the number of routine tests."
    - "I hope that expanded metabolic newborn screening becomes available soon."
    - "We need more genetic services readily available for families."
    - "There is a need to expand neonatal metabolic screens."
    - "Genetics CMS is needed. We have no genetics services available in Wichita."
    - "Our state is lacking in genetic counseling and physician sources."

Overall, development of State genetics program was viewed as a state need.

POLICY AND PROGRAM IMPLICATIONS:

1. Make genetics resource information available to the general public and to all primary care physicians, counselors or other medical providers via circulars, program materials and on the Internet.

2. Coordinate assistance to physicians so that they can include genetics service planning in their medical practices.

3. Distribute information about services that can be provided by genetics counselors to physicians, providers and the public via circulars, program materials and on the Internet.

4. Prepare information on cord blood banking and make it available via circulars and the Internet for physicians, providers and the public.

5. Provide continuing education courses on “Genetics of Specific Conditions”, “Basic Genetics 101”, and “Ethical and Legal Issues of Genetics” via self-study training manuals, interactive CD-ROM, conveniently located one-day weekend conferences and via the Internet.

Appendix A
Cover Letter and Survey Instrument

KANSAS

DEPARTMENT OF HEALTH
AND ENVIRONMENT
Division of Health

Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

www.kdheks.gov

May 2, 2007

Dear Kansas Physician:

In coordination with the University of Kansas Medical Center and the University of Oklahoma Health Science Center, we are requesting your assistance to assess availability and accessibility of genetics services in Kansas. We are requesting your assistance to do so.

Please complete the attached questionnaire, if possible, on-line at https://www.dhe.state.ks.us/surveys/Physician_Genetics_Survey.htm. If you are unable to access the on-line survey, please complete the attached hard copy form and return it to us in the enclosed self-addressed postage paid envelope.

The information that you provide will be published in summary format without any identifying information about you. Each physician participating in this survey can expect to receive a hard copy of the final document and/or an email notification about the availability of the report on our website.

We anticipate that the results of this assessment will be included as the preface to an eventual State Genetics Plan. If you have any questions relating to this survey, please phone Rachel Lindbloom at 785-296-8627. Thank you again.

Sincerely,

Howard Rodenberg, MD, MPH
Director of Health

Enc

CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 300, TOPEKA, KS 66612-1274
Voice 785-296-1086 Fax 785-296-1562

PHYSICIAN GENETICS SERVICE AND REFERRAL SURVEY

Please complete the following questions.

Name:	License No.

1. How many years have you been in medical practice: _____ years

2. Currently, your PRIMARY responsibility is (Check one.)
   - ☐ Administrative Skip Questions #3-7 and proceed to Question #8
   - ☐ Clinical care Proceed to Question #3, but skip Questions #8-9

CLINICAL CARE

3. Approximately how many patients do you currently have in your practice with a known or a suspected genetic disorder? _____ Patients

4. Within the past 12 months, approximately how many patients have you referred to a genetic specialist for any type of genetic service? _____ Patients

5. Do you know of a clinical genetics referral source?
   - ☐ Yes
   - ☐ No

6. In working with patients and families, has the lack of a payment source for medical genetic services been a barrier to access to these services?
   - ☐ Never
   - ☐ Sometimes
   - ☐ Always
   - ☐ N/A

7. Has the issue of lack of a payment source for medical genetic services prevented you from making a referral to the genetic service? (Skip Questions #8 and #9 and begin with Question #10).
   - ☐ Never
   - ☐ Sometimes
   - ☐ Always
   - ☐ N/A

ADMINISTRATIVE

8. How much impact do you think medical genetics will have on your practice? (Check one in each of the 3 categories.)

	No Impact	**Little Impact**	**Major Impact**
Currently	☐	☐	☐
In the next 5 years	☐	☐	☐
In the next 10 years	☐	☐	☐

Please continue to page 2 on the back of this page

9. Are you planning to include genetic services in your practice. (Check one in each of the 3 categories.)

	Yes	**No**
Currently	□	□
In the next 5 years	□	□
In the next 10 years	□	□

WHERE TO FIND ADDITIONAL INFORMATION

10. Currently, if you have a question related to medical genetics, where are you most likely to go to find additional information? (Check only one answer.)
    - □ Text book
    - □ Journal articles
    - □ Internet
    - □ Ask a colleague
    - □ Ask a genetic service
    - □ Ask a genetic counselor
    - □ Drug company info
    - □ None
    - □ Other source: _____

11. Have you ever referred any of your patients to a genetic service for any type of genetics services? (Check one.)
    - □ Yes, If yes, where_____
    - □ No, If no, where would you send them? _____

12. Is your practice specialty OB, OB/GYN or Family Practice?
    - □ Yes
    - □ No

OB, OB/GYN AND FAMILY PRACTICE QUESTIONS (If not OB, OB/GYN or Family Practice, skip to #15.)

13. When you have an abnormal prenatal genetic testing, where do you refer patients for further follow-up? _____

14. If genetic services counselors were available to you, what types of services could they provide to meet your patients' needs? (Check all that apply.)
    - □ Clinical management
    - □ Continuing education (grand rounds)
    - □ Diagnostic workup
    - □ Genetics clinic for referrals
    - □ Genetic counseling for families
    - □ Genetic consultation only
    - □ Other: _____

Please continue on page 3

CORD BLOOD BANKING

15. Have you received training in umbilical cord collection and maintenance for cord blood banking purposes?
    - Yes
    - No

16. If your response to Question #15 is yes, please indicate your training needs in cord blood collection and maintenance.
    - No additional training needed
    - Additional training needed

17. Do you currently provide education to your patients regarding public and/or private cord blood banking?
    - Yes
    - No

CONTINUING EDUCATION

18. Within the past 12 months, estimate the number of Continuing Education (CE) hours you received on any subject related to medical genetics? (Check one.)
    - 0 hours
    - 1-4 hours
    - 5-8 hours
    - 9-24 hours
    - 25+ hours

19. If CE were provided, what topical areas related to genetics do you think would most help you? (Check ALL that apply.)
    - Basic "Genetics 101"
    - Clinical nursing aspects of genetics
    - Ethical and legal issues of genetics
    - Genetics of specific conditions
    - Public Health issues of genetics
    - Other _____

20. If CE of topical areas in genetics were offered, what is the best method for obtaining the education? (Select your TOP THREE choices.)
    - Evening conference
    - Interactive CD-ROM on computer
    - One day conference during the week
    - One day conference on week-end
    - Self Study Training Manual
    - Short in-service lecture sessions
    - Videotapes
    - Other _____

Please continue to page 4 on the back of this page

21. If genetics CEs were available in your area, how likely would you be to attend? (Check one.)

- □ Very Likely
- □ I might attend
- □ Not very Likely
- □ I would not attend

22. What is your opinion about the role of the State Health Department relating to genetics issues?

_____
_____
_____

23. Any additional comments?

_____
_____
_____

Please return your survey in the enclosed postage paid self-addressed envelope within two weeks. A summary report of the results of this questionnaire will be posted on the KDHE web by September 1, 2007. The report will assure the confidentiality of each participant. If you would like an email notification when it is posted, please provide your email address here.

_____

THANK YOU FOR PARTICIPATING IN THIS SURVEY.

Appendix B
Kansas State Board of Healing Arts
Licensure Status Glossary

Licensure Status Glossary

ACTIVE: Issued to individuals who are actively engaged in the practice of medicine and surgery. Practitioners may reside within or outside of the state of Kansas. Professional liability insurance and continuing education are required. The term active excludes licenses which have been revoked, suspended or surrendered, but may include licenses upon which the Board of Healing Arts has placed some limitation.

DECEASED: The practitioner is deceased.

EXEMPT: Issued to individuals who have had an active license in the past and permits them to practice in four areas: 1). administrative review, peer review, disability determinations and give expert opinions; 2). provide patient services gratuitously including supervision, direction and consultation; 3). rendering professional services as a "charitable health care provider"; and 4). providing services as a district coroner. Professional liability insurance and continuing medical education are NOT required.

EXPIRED: The practitioner's license has expired.

FEDERAL ACTIVE: Issued to individuals who are employed by the federal government. No private practice outside of federal work is allowed. Continuing medical education is required.

INACTIVE: This status may be maintained by licensees not engaged in rendering any professional services in Kansas. Malpractice insurance coverage and continuing education hours are not required.

LIMITATION: A disciplinary restriction or condition imposed by the Board of Healing Arts on authorized practice activities.

MILITARY: Issued to individuals who are on active duty with the Armed Forces. No private practice outside of military assignment is allowed. Continuing medical education and insurance are not required.

PENDING: Issued as license is being processed prior to issuance.

REVOKED: The practitioner's license has been revoked through action of the Board of Healing Arts.

SURRENDERED: The practitioner's license has been surrendered to the Board of Healing Arts.

SUSPENDED: The practitioner's license has been suspended through action of the Board of Healing Arts.

Appendix C
Response Rate Report

	All	All	Clinical	Clinical	Admin	Admin
	Number	Percent	Number	Percent	Number	Percent
Surveys Returned	828	33.0	737	29.4	42	1.7
GENERAL QUESTIONS						
1. How many years have you been in medical practice?						
Answered	810	97.8	728	98.8	41	97.6
Not Answered	18	2.2	9	1.2	1	2.4
2. Currently, your PRIMARY responsibility is (Check one.)						
Administrative	42	5.1	0	0.0	42	100.0
Clinical	737	89.0	737	100.0	0	0.0
Not Answered	49	5.9	0	0.0	0	0.0
CLINICAL CARE QUESTIONS						
3. Approximately how many patients do you currently have in your practice with a known or a suspected genetic disorder?						
Answered	692	83.6	662	89.8	5	11.9
Not Answered	136	16.4	75	10.2	37	88.1
4. Within the past 12 months, approximately how many patients have you referred to a genetic specialist for any type of genetic service?						
Answered	740	89.4	709	96.2	5	11.9
Not Answered	88	10.6	28	3.8	37	88.1
5. Do you know of a clinical genetics referral source?						
Yes	519	62.7	493	66.9	4	9.5
No	239	28.9	229	31.1	2	4.8
Not Answered	70	8.5	15	2.0	36	85.7

	All	All	Clinical	Clinical	Admin	Admin
6. In working with patients and families, has the lack of a payment source for medical genetic services been a barrier to access to these services?	Number	Percent	Number	Percent	Number	Percent
Never	218	26.3	209	28.4	3	7.1
Sometimes	298	36.0	287	38.9	1	2.4
Always	56	6.8	53	7.2	0	0.0
N/A	186	22.5	174	23.6	2	4.8
Not Answered	70	8.5	14	1.9	36	85.7
7. Has the issue of lack of a payment source for medical genetic services prevented you from making a referral to the genetic service?						
Never	390	47.1	372	50.5	4	9.5
Sometimes	169	20.4	163	22.1	1	2.4
Always	22	2.7	20	2.7	0	0.0
N/A	183	22.1	171	23.2	2	4.8
Not Answered	64	7.7	11	1.5	35	83.3
ADMINISTRATIVE QUESTIONS						
8. How much impact do you think medical genetics will have on your practice? (Check one in each of the 3 categories)						
Currently - No Impact	73	8.8	59	8.0	8	19.0
Currently - Little Impact	176	21.3	146	19.8	24	57.1
Currently - Major Impact	39	4.7	31	4.2	5	11.9
Currently - Not Answered	540	65.2	501	68.0	5	11.9
In the next 5 years - No Impact	37	4.5	29	3.9	5	11.9
In the next 5 years - Little Impact	147	17.8	126	17.1	13	31.0
In the next 5 years - Major Impact	103	12.4	83	11.3	16	38.1
In the next 5 years - Not Answered	541	65.3	499	67.7	8	19.0
In the next 10 years - No Impact	37	4.5	29	3.9	5	11.9
In the next 10 years - Little Impact	89	10.7	79	10.7	5	11.9
In the next 10 years - Major Impact	160	19.3	130	17.6	24	57.1
In the next 10 years - Not Answered	542	65.5	499	67.7	8	19.0

9. Are you planning to include genetic services in your practice?

	All	All	Clinical	Clinical	Admin	Admin
	Number	Percent	Number	Percent	Number	Percent
Currently - Yes	57	6.9	46	6.2	7	16.7
Currently - No	255	30.8	216	29.3	27	64.3
Currently - Not Answered	516	62.3	475	64.5	8	19.0
In the next 5 years - Yes	66	8.0	52	7.1	10	23.8
In the next 5 years - No	219	26.4	187	25.4	20	47.6
In the next 5 years - Not Answered	543	65.6	498	67.6	12	28.6
In the next 10 years - Yes	73	8.8	59	8.0	11	26.2
In the next 10 years - No	201	24.3	171	23.2	19	45.2
In the next 10 years - Not Answered	554	66.9	507	68.8	12	28.6

WHERE TO FIND ADDITIONAL INFORMATION

10. Currently, if you have a question related to medical genetics, where are you most likely to go to find additional information? (Check only one)

Text book	208	25.1	190	25.8	12	28.6
Journal articles	60	7.2	56	7.6	2	4.8
Internet	253	30.6	233	31.6	13	31.0
Ask a colleague	85	10.3	76	10.3	5	11.9
Ask a genetic service	56	6.8	51	6.9	1	2.4
Ask a genetic counselor	69	8.3	64	8.7	0	0.0
Drug company info	1	0.1	1	0.1	0	0.0
None	5	0.6	5	0.7	0	0.0
Other source	39	4.7	34	4.6	3	7.1
Other source, specified	34	4.1	31	4.2	2	4.8
Not Answered	52	6.3	27	3.7	6	14.3

	All	All	Clinical	Clinical	Admin	Admin
11. Have you ever referred any of your patients to a genetic service for any type of genetics services? (Check only one.)	Number	Percent	Number	Percent	Number	Percent
Yes	527	63.6	484	65.7	19	45.2
If yes, where	0	0.0	0	0.0	0	0.0
No	241	29.1	215	29.2	19	45.2
If no, where would you send them?	144	17.4	131	17.8	9	21.4
Not Answered	60	7.2	38	5.2	4	9.5
OB, OB/GYN AND FAMILY PRACTICE QUESTIONS						
12. Is your practice specialty OB, OB/GYN or Family Practice?						
Yes	360	43.5	335	45.5	11	26.2
No	394	47.6	355	48.2	26	61.9
Not Answered	74	8.9	47	6.4	5	11.9
13. When you have an abnormal prenatal genetic testing, where do you refer patients for further follow-up?						
Answered	331	40.0	308	41.8	10	23.8
Not Answered	497	60.0	429	58.2	32	76.2
14. If genetic services counselors were available to you, what types of services could they provide to meet your patients' needs? (Check all that apply.)						
Clinical Management	199	24.0	184	25.0	5	11.9
Continuing education (grand rounds)	156	18.8	141	19.1	7	16.7
Diagnostic workup	253	30.6	236	32.0	6	14.3
Genetics clinic for referrals	229	27.7	216	29.3	5	11.9
Genetic counseling for families	300	36.2	284	38.5	6	14.3
Genetic consultation only	94	11.4	87	11.8	3	7.1
Other	16	1.9	13	1.8	1	2.4
Other, specified	10	1.2	7	0.9	1	2.4
Not Answered	483	58.3	415	56.3	32	76.2

CORD BLOOD BANKING QUESTIONS	All	All	Clinical	Clinical	Admin	Admin
15. Have you received training in umbilical cord collection and maintenance for cord blood banking purposes?	Number	Percent	Number	Percent	Number	Percent
Yes	111	13.4	103	14.0	2	4.8
No	627	75.7	575	78.0	31	73.8
Not Answered	90	10.9	59	8.0	9	21.4
16. If your response to Question #15 is yes, please indicate your training needs in cord blood collection and maintenance.						
No additional training needed	78	70.3	74	71.8	1	50.0
Additional training needed	28	25.2	26	25.2	1	50.0
Not Answered	5	4.5	3	2.9	0	0.0
17. Do you currently provide education to your patients regarding public and/or private cord blood banking?						
Yes	109	13.2	102	13.8	4	9.5
No	606	73.2	557	75.6	27	64.3
Not Answered	113	13.6	78	10.6	11	26.2
CONTINUING EDUCATION QUESTIONS						
18. Within the past 12 months, estimate the number of Continuing Education (CE) hours you received on any subject related to medical genetics? (Check one.)						
0 hours	410	49.5	379	41.4	14	33.3
1-4 hours	310	37.4	278	37.7	18	42.9
5-8 hours	45	5.4	42	5.7	3	7.1
9-24 hours	8	1.0	7	0.9	1	2.4
25+ hours	10	1.2	9	1.2	1	2.4
Not Answered	45	5.4	22	3.0	5	11.9

19. If CE were provided, what topical areas related to genetics do you think would Help you? (Check ALL that apply.)

	All Number	All Percent	Clinical Number	Clinical Percent	Admin Number	Admin Percent
Basic "Genetics 101"	389	47.0	353	47.9	20	47.6
Clinical nursing aspects of genetics	41	5.0	40	5.4	1	2.4
Ethical and legal issues of genetics	314	37.9	286	38.8	15	35.7
Genetics of specific conditions	505	61.0	468	63.5	22	52.4
Public health issues of genetics	282	34.1	253	34.3	15	35.7
Other	38	4.6	34	4.6	2	4.8
Other, specified	26	3.1	22	3.0	2	4.8
Not Answered	90	10.9	62	8.4	7	16.7

20. If CE of topical areas in genetics were offered, what is the best method for obtaining the education? (Select your TOP THREE choices.)

Evening conference	226	27.3	211	28.6	8	19.0
Interactive CD-ROM on computer	303	36.6	275	37.3	14	33.3
One day conference during the week	223	26.9	200	27.1	17	40.5
One day conference on week-end	258	31.2	239	32.4	9	21.4
Self Study Training Manual	303	36.6	284	38.5	11	26.2
Short in-service lecture sessions	202	24.4	183	24.8	11	26.2
Videotapes	94	11.4	86	11.7	4	9.5
Other	59	7.1	51	6.9	5	11.9
Other, specified	50	6.0	42	5.7	5	11.9
Not Answered	75	9.1	48	6.5	8	19.0

21. If genetics CEs were available in your area, how likely would you be to attend? (Check one.)

Very Likely	220	26.6	202	27.4	11	26.2
I might attend	385	46.5	347	47.1	18	42.9
Not Very Likely	133	16.1	128	17.4	4	9.5
I would not attend	68	8.2	50	6.8	7	16.7
Not Answered	22	2.7	10	1.4	2	4.8

COMMENTS	All	All	Clinical	Clinical	Admin	Admin
22. What is your opinion about the role of the State Health Department relating to genetics issues?	Number	Percent	Number	Percent	Number	Percent
Answered	444	53.6	399	54.1	23	54.8
Not Answered	384	46.4	338	45.9	19	45.2
23. Any additional comments?						
Answered	213	25.7	180	24.4	15	35.7
Not Answered	615	74.3	557	75.6	27	64.3
Request for email notification when the report is posted						
Yes	71	8.6	64	8.7	5	11.9
No	757	91.4	673	91.3	37	88.1