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The Economics of Clinical Genetics Services. III. Cognitive Genetics Services Are Not Self-supporting

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Summary

We investigated the amount of time required to provide, and the charges and reimbursement for, cognitive genetics services in four clinical settings. In a prenatal diagnostic center, a mean of 3 h/couple was required to provide counseling and follow-up services with a mean charge of $30/h and collection of $27/h. Only 49% of personnel costs were covered by income from patient charges. In a genetics clinic in a private specialty hospital, 5.5 and 2.75 h were required to provide cognitive services to each new and follow-up family, respectively. The mean charge for each new family was $25/h and for follow-up families $13/h. The amount collected was less than 25% of that charged. In a pediatric genetics clinic in a large teaching hospital, new families required a mean of 4 h and were charged $28/h; follow-up families also required a mean of 4 h, and were charged $15/h. Only 55% of the amounts charged were collected. Income from patient charges covered only 69% of personnel costs. In a genetics outreach setting, 5 and 4.5 h were required to serve new and follow-up families, respectively. Charges were $25/h and $12/h, and no monies were collected. In all clinic settings, less than one-half of the total service time was that of a physician, and more than one-half of the service time occurred before and after the clinic visit. In no clinic setting were cognitive genetics services self-supporting. Means to improve the financial base of cognitive genetics services include improving collections, increasing charges, developing fee schedules, providing services more efficiently, and seeking state, federal, and foundation support for services.

Introduction

Recent advances in medical genetics have led to predictions of increased demand for laboratory and cognitive services (Finley et al. 1987; Holtzman 1988). Whether these demands can be met will depend on the availability of trained personnel and on the means to remunerate them. Historically, cognitive genetics services have been subsidized by a variety of mechanisms, including federal, state, institutional, and foundation grants (Pyeritz et al. 1987). However, during the past few years most clinical genetic services have been supported increasingly by direct billing of patients (Myers and Prouty 1987).

In all areas of medicine, cognitive services (those involving diagnosis, management, and counseling) are generally perceived to be financially undervalued when compared with procedural or laboratory services (Berenson 1987). Unless personnel providing cognitive genetics services also perform procedures, such as amniocentesis, or derive income from genetics laboratory services, they must rely solely on revenue from cognitive services in order to achieve self-sufficiency. Genetics services may be particularly undervalued. They emphasize patient education, evaluation and follow-up of entire families, psychosocial support, and counseling and are provided by a multidisciplinary team, not all the members of which bill for their services (Pyeritz et al. 1987).

Cognitive genetics services were documented to be time-consuming and labor-intensive in one medical genetics clinic that offered services to adults (Bernhardt et al. 1987). In that study, newly referred and returning families required means of 7.1 and 4.0 service hours and produced average hourly collections of $19/h and

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$12/h, respectively. Income from cognitive services covered only 38% of the clinical portion of personnel costs. Because that study investigated a single clinic in a large urban university medical center, we undertook the investigation reported here to characterize professional involvement and reimbursement of cognitive services in other settings.

Material and Methods

The Study Settings

Four diverse clinical genetics service centers within the mid-Atlantic region were selected:

1. A general pediatric genetics clinic, which served patients with a wide range of diagnoses, located in a large urban pediatric hospital. The clinic was staffed by clinical geneticists, genetic counselors, a social worker, an educational psychologist, and a secretarial staff. Patients were routinely charged according to a fee schedule established by the hospital.
2. A genetics clinic located in a private specialty hospital. Although services were available to children with any known or suspected diagnosis, most patients had neurologic or orthopedic conditions. The staff consisted of one clinical geneticist, one genetic counselor, and one secretary. Routine billing according to a fee schedule established by the hospital was instituted 2 years before our survey.
3. Five outreach clinics, staffed by one clinical geneticist, one genetic counselor, one public-health nurse, and one clinic secretary. The clinics were partially state supported. Patients with insurance, including medical assistance, were billed a standard fee, and all others were billed according to a sliding fee schedule based on family income.
4. A prenatal diagnosis clinic, located in a large urban teaching hospital. The staff included one full-time and several part-time counselors, one clinical geneticist, and one secretary. Patients were charged a standard fee for counseling, and payment at the time of service was encouraged.

Methodology

At each study site for a 4–8 wk period, consecutive newly referred and follow-up patients were ascertained when a clinic appointment was scheduled, and a log of service time was initiated. In the prenatal diagnosis clinic, only newly referred patients were included in the study. Data on the total amount of time required by all genetics clinic staff members (including secretaries) to provide services before, during, and after the clinic visit were collected for each patient and family who kept their scheduled appointment. Time devoted to chart and literature review prior to the clinic visit and time for case conferences, telephone follow-up, and correspondence after the visit was included. Staff travel time to outreach clinics was not included. For the prenatal diagnosis clinic, reported time after the clinic visit included counselor time at amniocenteses and time required to communicate results to families. Obstetrician and laboratory personnel time was not included. In order to allow for comparison among centers, the time data of genetic counselors, social workers, and nurses were combined into a category called "non–M.D. professional."

For each patient, charges and payments for cognitive services only were obtained from the billing office at each collaborating institution. To calculate hourly income for each study setting, average payment was divided by the average time expended by all clinic personnel. A collection ratio was generated for each study site by dividing the mean collections by the mean charges, without accounting for any adjustments (such as insurance write-offs or bad debts).

For each study setting, we determined the fraction of clinical personnel costs covered by clinical practice income. We did not attempt to assess overhead or indirect costs. We asked the clinic director to provide the figure for the total amount of collections from patient charges for cognitive services only for one fiscal year and the total personnel costs of those involved in providing clinical services for the same time period. For staff members who spent less than total professional time providing clinical service, their individual proportion of clinical time was multiplied by the sum of their salary plus fringe benefits. The total income was then divided by the sum of the personnel costs and multiplied by 100. A resulting value of greater than 100% would indicate that personnel costs could be covered by income from patient services.

Results

Data on 46 families in the general pediatric genetics clinic, 43 in the private specialty clinic, 30 in the outreach clinics, and 24 in the prenatal diagnosis clinic who kept their scheduled appointments were analyzed. The mean service times for new and follow-up families, expressed as the total of time spent before, during,

Table 1

Mean Service Time for Families Served in Clinical Settings Studied

	Service Time/Family (min)							
	New Families				Follow-up Families			
Site	Before Clinic	During Clinic	After Clinic	Total	Before Clinic	During Clinic	After Clinic	Total
Pediatric genetics	27	89	130	246	29	79	127	235
Private specialty	64	155	120	339	9	97	63	169
Outreach	56	92	159	307	45	75	142	262
Prenatal diagnosis	19	84	77	180	...	...	...	...

and after the clinic visit for each study site, are presented in table 1. The average service times of each category of team member are shown in table 2. Mean charges and collections per family and per service hour are presented in table 3. In the outreach clinics, all study patients were extended professional courtesy and, because of a mistake by the billing office, were not held responsible for charges; no fees were collected and the collection ratio was therefore zero.

In the prenatal diagnosis clinic, 49% of the clinical portion of personnel costs were covered by income from genetic counseling charges. In the pediatric genetics clinic, 69% of personnel costs were covered by clinical practice income. In the other two study settings—the outreach clinics and the specialty clinic—it was impossible to retrieve the figure for the total annual income from clinical services. We were therefore unable to calculate the portion of clinical personnel costs covered by income from clinical practice.

Discussion

These data demonstrate that in diverse settings, cognitive genetics services are time-consuming to provide and not self-supporting. The results support our previous conclusions (Bernhardt et al. 1987). Because disparate settings have now been studied, our recommendations should be applicable to most provider settings.

The center recording the least amount of service time per patient, a mean of 3 h, was the prenatal diagnosis clinic, in which only genetic counseling services were provided. Although nearly 1 h of this time was secretarial, professionals, primarily genetic counselors, were occupied for over 2 h. In this clinic, less than 50% of personnel costs were covered by clinical practice income. The mean service time in the other three settings, all providing diagnosis, management and counseling by a multidisciplinary team, varied from about 4 to 5.5 h per family. Secretarial time was about 1.5 h in each setting, and about 1 h of this time was spent after the clinic visit in transcribing clinic notes and correspondence. Physician time varied from about 1.5 to 2 h; in each of the three comprehensive settings, approximately one-half of the total physician time was spent with families during the clinic appointment. The mean total service time for follow-up patients was nearly as great as

Table 2

Mean Service Time of Each Category of Team Member

	Service Time/Family (min)							
	New Families				Follow-up Families			
Site	Non–M.D. Professional	M.D.	Secretary	Total	Non–M.D. Professional	M.D.	Secretary	Total
Pediatric genetics	38	116	91	245	19	126	90	235
Private specialty	136	104	99	339	62	65	52	179
Outreach	119	99	87	305	90	95	78	263
Prenatal diagnosis	111	11	57	179	...	...	...	...

Table 3

Analysis of Reimbursement for Genetics Services

SITE	CHARGE/FAMILY ($)		COLLECTION/FAMILY ($)		COLLECTION RATIO		CHARGE/SERVICE HOUR ($)		COLLECTION/SERVICE HOUR ($)	
	New	Follow-up	New	Follow-up	New	Follow-up	New	Follow-up	New	Follow-up
Pediatric	117	55	64	30	.55	.55	28.65	13.95	15.62	7.63
Specialty	139	38	35	5	.25	.14	25.14	13.66	6.29	1.89
Outreach	130	52	0	0	0	0	25.44	11.90	0	0
Prenatal	91	. . .	83	. . .	.91	. . .	30.31	. . .	27.57	. . .

for new patients in two settings—the pediatric genetics clinic and the outreach clinics. In both of these settings, over 2 h of service time after the clinic visit was recorded for both new and follow-up families. In all three general genetics clinics, the physician time recorded for new and follow-up families was nearly identical.

The charge per service hour for new patients varied little among the settings. On the other hand, collections ranged from $27/h in the prenatal diagnosis clinic to $6 h in the specialty clinic. This variability primarily reflected billing-office activity: in both the pediatric clinic and the specialty clinic a large proportion of patients, despite having commercial insurance, paid nothing for their genetics services. Partial payments of charges by insurers was therefore not the main reason for low collections. Obtaining payment at the time of service, as was the practice in the prenatal diagnosis clinic, where the collection ratio was 0.91, contributed greatly to improving collections. Inadequate monitoring of billing-office activity, as occurred in the outreach clinics, where all charges were mistakenly written off, resulted in dramatically reduced collections.

For all four study settings it was impossible to determine the clinical portion of salaries covered by clinical practice income. For the two with the greatest hourly income, the prenatal diagnosis clinic and the pediatrics clinic, only 49% and 69%, respectively, of personnel costs were covered by income from patient charges. Improving the collection ratio in the pediatric genetics clinic could increase this percentage somewhat, but in the prenatal diagnosis clinic the collection ratio was already high, and improved collections would have marginal impact.

Cognitive genetics services are traditionally and commonly offered at institutions like those in this study, where directors have become accustomed to supporting their salaries and those of their staff by a combination of state, federal, foundation, institutional, research, and third-party reimbursement monies (Collins 1987; Myers and Prouty 1987). Often, income from laboratory services is used to subsidize clinical personnel salaries, especially those of genetic associates. At the sites we studied and in most service settings, the livelihood of clinical geneticists and genetic counselors is not solely dependent on income from cognitive services. This may change as foundation, federal, and state support for cognitive services becomes more scarce and as hospital administrators become less willing to subsidize services that require institutional support. To meet increasing demands for service with less subsidy, clinic directors will need to explore ways to increase their clinical practice income.

Salary support for genetic counselors and reimbursement for the services they provide is especially problematic for several reasons (Bernhardt 1988). First, because there is no Current Procedural Terminology (CPT) code specifically for genetic counseling, third-party payers may not reimburse for the service or may do so inconsistently. Second, in some states, medical assistance and crippled children's programs do not cover genetic counseling (Ireys et al. 1985; Greenstein et al. 1988). Third, insurance companies often reimburse at a lower rate or less often for *counseling* than for *medical* services. Last, genetic counselors are not licensed and are therefore not regarded by third-party payers as reimbursable providers.

In these regards, two national initiatives may benefit the financial future of cognitive genetics services. First, the Physician Payment Review Commission of the Congressional Budget Office has recommended adopting a physician fee schedule based on a relative value scale, rather than on the existing "customary, prevailing and reasonable" (CPR) method of payment (Berenson 1987). Although not imminent, change in this direction will result in increased reimbursement for cognitive, labor-intensive types of service, such as clinical genetics. Based on the results of our study, service time before and after the actual visit and the time contribution of nonphysician professionals will need to be considered in determining the value of cognitive genetics services by this proposed method.

Second, revisions of CPT codes in 1987 have improved definitions of genetics laboratory services, but the entire scope of cognitive genetics services, including genetic counseling, has not been addressed. The Genetics Services Committee of ASHG has adopted CPT code revision as a high-priority issue on its current agenda. Revision of existing codes and generation of new ones are accomplished by an advisory committee sponsored by the American Medical Association. Each medical discipline in the American Board of Medical Specialties (ABMS) has representation on the CPT advisory committee; unfortunately, the American Board of Medical Genetics is not a member of the ABMS, and the specialty of genetics has never had formal or consistent input. However, ASHG has recently appointed a liaison representative to the CPT advisory committee. Approval of codes for new services or revisions of existing codes, however, does not guarantee that insurers will reimburse for the newly defined services and does not address the issue of reimbursement of services provided by nonphysicians such as genetic associates.

For the time being, genetics clinics have several options to increase revenues. First, given that considerable time is spent with each family in addressing a variety of issues, charges should reflect the level of service provided. Most families have complicated, often undiagnosed medical conditions and a large number of medical and psychosocial concerns. Unlike a comprehensive new-patient evaluation in another subspecialty, one in genetics might require (1) a complete history of present and past medical problems, (2) a thorough physical examination concentrating on multiple organ systems, (3) a complete family history, (4) extensive literature review, (5) examination of possibly affected relatives, (6) genetic counseling, and (7) social work intervention. Despite these differences, the prevailing fees and third-party reimbursements for genetics services are based generally on charges for comparable levels of service for other subspecialty physicians. Comparable studies of service time of other subspecialists are not available, but at least one study of adult patients shows that mean physician time for a comprehensive new patient evaluation is about one-half that recorded in this study (Keeler et al. 1982). Until new genetics-specific CPT codes are developed, approved, and adopted by payers, providers, to maximize reimbursement, should bill for the level and type of service rendered. This will result in increased charges to some families. For follow-up services in particular, patients who are provided comprehensive care should be billed for a comprehensive follow-up visit (CPT code 90080). When patients are referred by a physician for a consultation, the codes for consultation services, which generally result in greater reimbursement than those for visits, should be used for billing (e.g., CPT code 90630). A recent survey of consumer costs for genetics services reported that one-half of providers charge only a single fee for outpatient services, regardless of the level of service (Myers and Prouty 1987). Fee schedules that account for various levels and types of cognitive service need to be developed.

If service is provided to more patients while personnel costs and collection ratios are kept constant, revenue will increase. It is apparent from our study that considerable time is spent with patients in clinic and on patient-related activities before and after the clinic visit. We did not, unfortunately, explore the nature of the tasks performed during the time recorded by individual staff members. However, there are likely ways providers can reduce time per patient without sacrificing service quality. We discussed this issue with staff at the study sites and were able to target areas for possible change which could result in increased productivity. First, there were multiple examples of service provided when both the physician and genetic counselor were present for the entire encounter. There are likely to be many instances when this is unnecessary. Second, providers expressed surprise at the great amount of service time accounted for by secretaries. Much of the secretarial time seemed to be related to the length of clinic notes and correspondence, an area which deserves some attention. Third, group counseling, particularly for prenatal diagnosis patients, can save counselor time.

Income can be increased, without increasing charges, by improving collections (Pyeritz et al. 1987). Payment at the time of service has a positive effect on income by both increasing collections and reducing costs of billing. The expectation of prompt payment needs to be made clear to billing personnel and to patients. A standard policy of adjustments and professional courtesy should be established.

Obtaining third-party reimbursement for genetic counseling is problematic because there is no CPT code for the service and because genetic counselors are not licensed. Until these two issues are resolved satisfactorily, if centers wish to improve reimbursement, genetic counseling should be billed as a consultation under the name of the supervising physician.

Finally, directors of genetics clinics should closely monitor clinical practice income, billing and collection practices, and fee schedules. They should periodically review data on charges and collections with their own business or billing offices. Such information is vital because it will document the financial status of individual provider settings and form the basis for change.

We believe that the financial balance sheet of provider settings can be greatly improved by implementing some of the changes we have suggested. However, it is likely that cognitive services cannot be self-sufficient without major changes such as the development of genetics-specific CPT codes or a reimbursement system that accounts for the time- and labor-intensiveness of the service delivery. Until these changes occur, providers will need to continue to seek support from federal, state, institutional, and foundation sources.

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